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ABSTRACT

The Florida Comprehensive Program for Career Development: K-Universities is a consortium effort to develop a coordinated and comprehensive career education program for students in two public school districts, a community college, and a university. Components of the project include guidance, curriculum, and placement/followup. Third party evaluation by Educational Testing Service for the first year of project operations included orientation, designing a comprehensive future evaluation plan, reviewing project reports and similar data, and reviewing analyses of student data based upon measures related to project objectives. Tentative conclusions are that the project has initiated activities for all proposed components and target groups; exceptional project achievements are noted in the areas of communication and inservice training. Analyses of pre/post student measures of self-awareness and career knowledge showed no significant changes. Tentative recommendations include more advanced planning of inservice activities, more project resources allocated to career education programs at the postsecondary level, and careful defining of the project's role in implementation for each component and target group level. approximately 75 pages consist of appendixes: evaluation plan for fiscal year 1976, reviews of self-awareness and career knowledge instruments, and a review of student data collected during fiscal year 1975. (Author/EA)

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ED118869

A Third-Party Evaluation of the Florida Comprehensive Program for Career Development: K-Universities

Annual Evaluation Report FY 74-5

Roy Hardy

Educational Testing Service
Atlanta, Georgia
August 29, 1975

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
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EDUCATIONAL TESTING SERVICE

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August 29, 1975

Mr. Joe D. Mills, Director
Division of Vocational Education
Department of Education
Knott Building
Tallahassee, FL 3230

Dear Mr. Mills:

Educational Testing Services is pleased to submit to you and the Division of Vocational Education this report of the evaluation of "A Comprehensive Program for Career Development: K-Universities". The evaluation covers the period of the first operational year from July, 1974 through June, 1975.

Sincerely,

Roy Hardy
Assistant Director
Southern Office

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Abstract

The Florida Comprehensive Program for Career Development: K-Universities is a consortium effort to develop a coordinated and comprehensive program of career education for students in two school districts, a junior college and a university. Components of the project include guidance, curriculum, and placement/follow-up. This report covers the first year of project operations.

Third party evaluation activities by Educational Testing Service for the period covered by this report included orientation, designing a comprehensive evaluation plan for succeeding years of the project, reviewing project reports and similar sources of secondary data, and reviewing analyses of student data based upon measures related to project objectives.

Since much of the data was examined from secondary sources or was of an incidental nature, conclusions and recommendations are, at this point, very tentative:

1. The project has initiated activities for all proposed components and target groups.
2. Due primarily to pre-existing structures and programs, implementation for the elementary level and for the placement/follow-up component across levels is more advanced than for other project components and levels.
3. Exceptional project achievements are noted in the areas of communication and inservice training.

4. Analyses of pre and post student measures of self awareness and career knowledge showed no significant changes.
5. To improve continuity, consideration of alternatives and allocation of resources, it is recommended that more advanced planning of inservice activities be considered. The inservice program to be provided by the project should be at least tentatively planned on an annual basis.
6. To assure full development and implementation of CE programs at the post secondary level during the project funding period, a greater proportion of project resources should be allocated to this level.
7. As the project moves from what has been a planning-organization phase into more of an implementation phase, the project's role with respect to implementation should be carefully considered and defined for each component and target group level.

Appendices to the report include the evaluation plan for FY76, reviews of self awareness and career knowledge instruments, and a review of student data collected during FY75.

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I. Overview of the Project

"A Comprehensive Program for Career Development: K-Universities" is a consortium effort involving as principals two public school districts (Sarasota County and Manatee County, Florida), a community college (Manatee Junior College), and a university (University of South Florida). The consortium goal is to develop and implement a well-coordinated program of career education for all student groups served by the member institutions. Through central planning, coordination, and communication, the project is attempting to reduce duplications of effort and problems associated with articulation of students between member institutions.

The structure of the project includes three components (Guidance, Curriculum, and Placement/Follow-up), each functioning at four levels (Elementary, Secondary, Junior College, and University). Lessor, but similar, services have been extended to private schools, vo-tech schools, and community groups. Project activities are coordinated by a central management staff of six professionals in cooperation with a wide variety of advisory and task force committees composed of staff members from the consortium institutions. State direction for the project is through the Bureau of Vocational Research and Evaluation, Division of Vocational, Technical, and Adult Education.

The consortium project became operational on July 1, 1974, after an initial planning phase of 90 days, and is completing the first full year of operation. The annual budget for the project is approximately $180,000.

II. Overview of the Evaluation

In February, 1975, Educational Testing Service entered into an agreement with the Florida Department of Education, Division of Vocational, Technical, and Adult Education to plan and conduct an evaluation of the Florida Comprehensive Program of Vocational Education for Career Development as required by the Rules and Regulations of Section 142(c) of Part D, Vocational Educational Amendments of 1968, P. L. 90-576.

Two limitations were considered in structuring evaluation activities for the remainder of FY 75: First, the Career Education Consortium Project had been in operation for six months. Therefore, since ETS had had no previous association with the project, considerable time for orientation and planning would be required before implementation of a meaningful evaluation design would be possible. Secondly, with only six months remaining in the fiscal year, the probability of detecting program effects through change measures was remote.

The approach of ETS to the evaluation was to use the remaining months of FY 75 primarily to become familiar with the structure and philosophy of the Career Education Consortium project and to design a comprehensive evaluation plan to be implemented in FY 76. In addition, ETS sought to collect enough process data from secondary sources to determine the actual status of the project, and to review available analyses of student assessment data for evidence of possible project effects.

More specifically, the goals of the evaluation were as follows:

1. To develop, define, and establish working relationships with the various groups of people who have potential for input of information into the evaluation.
2. To organize existing information about both process and product in the schools and at the college, including the "before" measurement data that might be available at one or more schools.
3. To assemble information to support a certification that the program was, in fact, in operation.
4. To identify processes and activities which were not on schedule in their development and thus endangered the success of the program.
5. To solidify sampling and data collection procedures.
6. To develop the final evaluation design in congruence with the discovered realities of the program.
7. To process such before-after information about students in the first year of the program as was deemed accurate and relevant.

Methodology

Evaluative judgments of the status and achievements of the Florida Career Education Consortium in this report are based upon information from three sources. First, project documents and products such as quarterly reports, newsletters, and meeting minutes were reviewed. These documents have, at this point, been accepted as accurate and representative without extensive auditing. The evaluation design for succeeding years will, however, include a system of checks and balances to verify such project reports.

Secondly, the evaluators made frequent visits to the project site to discuss with project management goals, problems, and achievements to date. Although, the primary purpose of these visits was to gather information for planning an evaluation design, each visit provided incidental information relative to program status.

A third source of evaluation information was test data collected by the two school districts according to a design initiated prior to ETS involvement. A pre-post control group design was used. Measures of self-awareness and career knowledge were administered in grades 1-9. Further information on sample sizes, instruments used, and findings for this study is reported in Appendix A of this report.

Limitations of the Study

The most obvious and serious limitation of the present evaluation of "A Comprehensive Program for Career Development: K-Universities" is the lack of systematically collected objective data. Due to constraints of time and developmental sequence, ETS had to depend upon data from secondary sources such as project reports and student achievement measures collected by the district. Such data is extremely susceptible to misinterpretation since the evaluator may be unaware of the procedures and politics involved in the data collection or reporting, or may not have data on some critical alternate hypotheses. The limited contact of ETS with the project also makes it highly probable that there have been significant project activities and accomplishments of which the evaluator is simply unaware. Consequently statements in this report that "No evidence of ________________ was found" should not be interpreted as saying there has been no project activity in a given area. The data upon which this report is based is largely incidental. No systematic search for evidence of any particular activity or outcome was conducted.

III. Major Evaluation Activities

Orientation and Planning

The emphasis of the evaluation activities for FY 75 was on orientation of the evaluators and on development of a comprehensive evaluation plan to be implemented in FY 76.

A. Orientation activities included developing working relationships with the several levels of project management as well as a careful review of project planning documents and progress reports. Table 1 lists meetings between ETS staff and the Career Education Consortium (CEC) management. Table 2 lists those project documents received and reviewed by the evaluator. Linking the meetings of the evaluation and management staffs, many phone calls and written communications were exchanged. Each meeting or exchange brought a greater understanding of project philosophy, goals, and activities, and aided the development of an evaluation strategy responsive to project needs and valid as an assessment of project accomplishment.

B. To aid in planning data collection for subsequent periods of the projects, instruments used in the FY 75 evaluation were carefully reviewed for technical quality and relationship to project objectives. These reviews are included as Appendix B. Additional instruments were also collected and reviewed for appropriateness and these are also listed in Appendix B.

Table 1

Site and Project Visits
for the Evaluation of the Florida Comprehensive Program
for Career Development : K-Universities
for 1975

City	Date	Purpose	Persons Contacted
Tallahassee	1/9	Review proposal	Dr. Bert, Dr. Selman, Dr. Tully
Dallas, Texas	3/28-3/30	National Conference for 3rd Party Evaluators	Dr. Bert, CEC staff, USOE staff, Dr. Lyles
Bradenton	3/18-3/21	Orientation	CEC staff, Mr. Bellum, Dr. Freijo, Dr. Burley, Mr. Bucklin, Mr. Laudano, Mrs. Swatzell, Mrs. Foerster, Dr. Pelletti, Advisory Committee
Bradenton	4/15-4/16	Review Evaluation Plan	Dr. Bert, Dr. Selman
Bradenton	4/28-4/29	Present Draft Evaluation Plan	CEC staff
Bradenton	5/3	Attend workshop for faculty and department leaders in Consortium institutions	Dr. Selman, Dr. G. Simons, Workshop participants
Tallahassee	6/19	Review previous evaluations conducted in Florida	Dr. Bert
Bradenton	6/25-6/27	Review test schedule plans for 1975-76 with local districts	CEC staff, Dr. Bert, Mr. Laudano, Mr. Bucklin, Dr. Pelletti

Table 2

Documents Reviewed
for the Evaluation of the Florida Comprehensive Program for Career Development: K-Universities for 1975

Bureau of Occupational and Adult Education, U. S. Office of Education, Department of Health, Education, and Welfare. *Handbook for the evaluation of Career Education Programs (Draft)*. Washington, 1974.

Dale, J. *School Leaver Statistics for 1973-74*. Career Education Consortium.

Friejo, T. D. *Sarasota County Career Education Evaluation Report No. 2: Elementary Students' Pre-test Results*.

Holmbraker, H., et. al. *New Directions Program Annual Report 1973-74, Follow-up Study*. Sarasota County Vocational-Technical Center, 1974.

Martin, G. S. *Planning for Comprehensive Program of Vocational Education for Career Development*. Career Education Consortium, Final Report.

Pillott, G. M. and Ehlers, R. W. *District Plan for Career Education*. Sarasota, 1974.

Preston, J. R. *State of Florida Evaluation Committee on the School-based Job Placement Service Project, An Interim Report*. Florida State Department of Education, 1975.

Selman, J. W. *A Comprehensive Program of Vocational Education for Career Development K-University, First Quarterly Report (July 1-September 31, 1974)*.

Selman, J. W. *A Comprehensive Program of Vocational Education for Career Development K-University, Second Quarterly Report (October 1-December 31, 1974)*.

Selman, J. W. *A Comprehensive Program of Vocational Education for Career Development K-University, Third Quarterly Report*. Bradenton, Florida, Manatee Junior College, 1975.

Selman, J. W. *A Comprehensive Program of Vocational Education for Career Development K-University, First Interim Report*. Bradenton, Florida, Manatee Junior College, 1975.

Woolley, W. *Florida View Vital Information for Education and Work*. Chipley, Florida (Florida View Center at the Panhandle Area Educational Cooperative.)

Documents Reviewed (Continued)

Periodicals:

The Articulator, Newsletter of the Career Education Consortium of the State of Florida, Volume II, Number 4, April 1975.

The Articulator, Volume II, Number 5, 1975.

Community Career Line Quarterly Newsletter on Career Education, Volume 1, Number 1, Summer, 1975. Career Education Consortium, Manatee Junior College, Bradenton, Florida 33507.

OTHER

Employment Forms:

"Adult Office Occupations Training Program Follow-up Survey"

Articulation Problems, Admission Policies, Procedure and Requirements

"Career Education How Did You Do It?"

Manatee Junior College Follow-up Survey Form

"School Board of Manatee County Follow-up Survey"

"The School Board of Sarasota County Office of Placement and Follow-up Survey"

Abstracts: 5

Future Life Analysis and Guidance Program Proposal for Sarasota County, Florida.

"The Infusion of Career Education Competencies in the Pre-Service Preparation of Educational Personnel." Abstract, College of Education, University of South Florida, Tampa.

Proposals:

Buchlin, Walter P. Career Education Program 13.554 Proposal. Manatee County, Bradenton, Florida, 1975.

Federal Guideline Objectives for a Comprehensive Program of Vocational Education for Career Development K-University.

C. Several drafts related to the establishment of evaluation designs for both products and process were submitted and discussed. These led to an improved understanding of project structure and goals and contributed to the final evaluation design to be implemented in the second year of the project.

D. The principal product of orientation and planning activities was a comprehensive evaluation plan based upon project structure and goals and designed to provide objective data from a variety of sources for the future assessment of project achievements. This plan is briefly described in Appendix C.

Process Evaluation

Although it was not possible to implement any systematic design for process evaluation in the short time available in FY 74-5, several evaluation activities provided incidental evidences of the status of program components.

A. Each site visit listed in Table 1 provided information on current and past project activities through staff interviews, participant interviews, and direct observation.

B. A thorough review of the project proposal and related planning documents and quarterly progress reports provided a comparison of planned activities and schedules with actual occurrences.

C. A search of project quarterly reports for activities representative of each management function at each target group level was conducted to provide evidence of the developmental stage of programs for each target group level. Table 3 is based upon this search.

Product Evaluation

Product evaluation, in this context, refers to the analysis of student changes as measured by a variety of cognitive and affective measures. Prior to ETS's involvement with the Career Education Consortium project, two school districts in the CEC had contracted for the collection and analysis of data related to the student objectives of the project. ETS agreed to review the analyses of these data and to comment on possible implications for future project activities. A report of this activity is included as Appendix A. No additional data related to product evaluation was collected by ETS.

IV. Findings

Findings related to the CEC project are discussed in two subdivisions: program status and program accomplishments. All findings are based upon relatively limited information since no systematic design for information gathering was implemented. Judgments are based primarily on interactions with the project management staff and examination of project records and products.

Program Status

Every new project will go through a period of definition in which the roles and goals of the projects are continuously changed and refined. Such a period was very evident in the CEC project. Even though there was a formal planning effort before implementing the project, alterations in structures, roles, and goals evolved in response to the needs of funding agencies, the consortium membership, and the philosophies, skills, and personalities of the staff involved. Much of the confusion associated with initial definition has passed. The CEC management staff seem to be confident of their role in promoting articulation and career education in the service area. However, with many institutions and agencies each having a vested interest in the project, pressures to shift project emphases and/or resources will always be present. In such situations, it is extremely important that project plans be explicitly stated and communicated to all groups involved.

One indication that perhaps the major battles associated with project definition have passed is that the project has begun to systematically develop programs and services. Some CEC programs are in the very early stages of development; others are very near operational status. The more fully developed programs are, in general, those that could build upon substantial previous efforts. This would include Placement and Follow-up which was partially in operation before the Consortium was formed and curriculum efforts at the elementary level where district staffs were already involved.

Although there is considerable variance in the level of development, development of programs for all project defined target groups has begun. A systematic review of the four quarterly reports from the project to the Department of Education produced examples of project activities for almost all levels and all management functions. Some of these exemplary activities are included in Table 3. The only area in which no evidence of activity was found was evaluation at postsecondary levels and for private schools and community groups. This is perhaps indicative of the developmental status of programs in these areas.

Management functions in a developmental effort proceed in sequence from planning to implementation, evaluation, and dissemination. The absence of evaluation activities at the postsecondary level is evidence that the programs for this level have not yet been sufficiently implemented to justify evaluation.

Table 3

Exemplary Project Activities Organized by Target Group and Management Function

	Planning	Implementation
Elementary School	Discussion of student input through rap sessions with students (2nd qtr., p. 46)	Elementary School Orientation-Establishment-Operations-Assistance Packets (2nd qtr., p. 46) Consult with schools in planning special "Career Week" activities (3rd qtr., p. 101, 1st qtr., p. 121)
Secondary Schools	Plans for Career night, day, and week programs (2nd qtr., pp. 167-68) Plans for forming a student advisory committee (2nd qtr., p. 46)	In-service training programs on curriculum improvement, need for career education on secondary level. (2nd qtr., pp. 5, 94, 95, 96, 1st qtr., p. 121)
Manatee Junior College	Set up communications between CEC and MJC faculty, staff, and student body. Setting up of Coordinating Committee (2nd qtr., p. 54)	Set up student advisory committee (2nd qtr., p. 58) Established Career Education Task Forces at MJC (3rd qtr., pp. 1, 124, 1st int., p. 5) Interfacing of the consortium staff with MJC staff to identify existing career education activities (3rd qtr., p. 9)
University of South Florida	Formation of postsecondary coordinating committee with USF (2nd qtr., p. 53, p. 2)	Establish career education task force at USF (3rd qtr., p. 1)
Other	Survey of private schools to identify areas of interest (2nd qtr., p. 41) Request for clarification of individual school district involvement with private schools (2nd qtr., p. 46)	Dr. Mary Green appointed to coordinate efforts for private schools (2nd qtr., p. 41) In-service training sessions for postsecondary, secondary, and private schools (1st int., p. 258)

Table 3 (Continued)

Evaluation	Dissemination
Workshop Evaluations (1st int., pp. 209-239) Consultant Evaluation (1st int., pp. 240-252)	Workshop with Manatee Elementary Schools and Sarasota Elementary Schools (1st int., pp. 209, 210 212, 213, 214, 215,...)
Evaluation of Job Placement Services (1st int., p. 284)	Presentations at several high schools (workshops, etc.) (2nd qtr., pp. 5, 94, 95, 96)
	Staff members lectured on Career Education at MJC (3rd qtr., p. 15)
	Staff members lectured at USF on Career Education (3rd qtr., p. 15)
	In-service training session for postsecondary and secondary and private schools (1st int., p. 258)

Due to previous State funding for career education in the districts, programs at the elementary and secondary levels are further along in their development than programs at the postsecondary level. Consequently, programs at the postsecondary level are still in a planning-implementing phase and evaluation is not yet appropriate.

Prior to implementation of the Consortium, a structure for the implementation of career education and a staff with full-time responsibility for career education existed in the two member school districts. No such structure previously existed at the postsecondary level or in private schools and community groups. It is logical to expect programs in these areas to devlop more slowly since the consortium must "start from scratch".

Based upon admittedly limited information, the evaluator can identify no component or target groups for which the level of project activity during the first year was not within realistic expectations. As Table 3 indicates, there has been some project planning and implementation activity for every target group level. The level of project activity and resource commitment at each level is related to the status of existing programs at the time the consortium was initiated. Efforts at the postsecondary level have largely been directed toward initial communications, orientation, and planning; programs for the school districts have built upon previously existing operational programs through coordination of district efforts and extensions of in-service training.

Program Accomplishments

As previously noted, project activities in all areas meet normal expectations for a first year developmental effort. However, in two areas accomplishments of the project are exceptionally notable. Perhaps the most visible program accomplishments are in the areas of communication and articulation. Ten committees and task forces involving some 50 different persons have been organized by the project and meet on a regular or periodic basis. A general project newsletter, The Articulator, is distributed monthly. A placement and follow-up newsletter has also been distributed and a third effort, Community Career Line, is under development. The project staff also averages over 200 contacts per month with the staffs of the Consortium institutions. This intergroup communication and participation is essential to a cooperative effort and the project should be commended for accomplishments in this area. Several problems or potential problems have been eliminated by bringing the right persons or groups together for discussions. The project has also been extremely active in disseminating project information to outside groups through conferences, direct mailings, and news releases.

Another area in which substantial activity is evident is in-service training. A number of workshops for both administrators and faculty have been conducted by the project. Six major workshops are reported in addition to workshops conducted by the two district CE staffs. Again, there has been no opportunity to systematically assess the effectiveness of these activities, but the one session attended by an ETS evaluator was marked by good participation and favorable responses from participants and evaluations compiled by the CEC project staff indicate that participants judged the workshops to be beneficial and well conducted. Summaries of questionnaire data collected from participants of several workshops are included in the project's interim report for FY 75.

The findings and accomplishments noted in this report are not necessarily representative of the most significant accomplishments of the project. They are simply those most evident in the relatively limited contact between evaluator and project.

V. Problems Encountered in the Evaluation

In evaluating any developmental effort, some problems come with the job. In the CEC project, there was considerable apprehension about the role of a third party evaluator. The two districts involved had previously contracted with another third party and were concerned that additional data and interference with classes would be required. Of course, those directly involved in the project were anxious for it to succeed and, to some extent, viewed the evaluator as a threat to project success and to project funding.

Much of this initial apprehension has been relieved through cooperative planning and frequent face-to-face communication between the evaluator and the project. It was also agreed that ETS would not collect any additional data in the two consortium districts, but would review and interpret data collected by district's third party evaluator.

In attempting to design an evaluation plan for FY 76, several drafts were submitted by ETS and numerous communications were exchanged among the evaluator, the State project director, and the project staff before approval was obtained. This delayed other evaluation activities for FY 75, but should result in an improved design for subsequent years.

In attempting to interpret data on student objectives, the evaluator was handicapped by a lack of supporting process data for the Sarasota and Manatee school districts. Specifically, there was no data to verify an actual treatment difference existed in designated "treatment" and "control" classes. Consequently, in measurement areas where no student differences were found between treatment and control groups, the alternate hypothesis, that no treatment differences existed, remains plausible.

The role of the third party evaluator, as presently defined, is a difficult one. He must simultaneously consider the information needs and concerns of USOE, the State DOE, and the local project management. Considerable effort has been required to establish working relationships that will allow this role and further cooperation will be needed.

Dissemination Activities

No evaluation data or findings related to the CEC project have been disseminated by ETS. The evaluation plan for FY 76 has, however, been shared with other third party evaluators working on similar projects.

VI. Conclusions and Recommendations

Judgment concerning project status, project effects and prognosis of the project's future must, at this point, be very tentative. The project is in its first year; the evaluation began six months into that year.

In general, the evidence is sparse. Conclusions must be considered in this light.

Planning

Much of the activity of the CEC project during the first year has been in the areas of organization and planning. Based upon admittedly superficial observations, it is the evaluator's opinion that the project has been very successful in this area. It is never easy to coordinate the activities of several groups to maximize benefits to all. Perhaps the key to successful group endeavors includes involvement and communication. There is substantial evidence that the CEC project has established both a high level of involvement and almost continual communication among the staffs of the consortium institutions. The wide variety of active planning committees, advisory committees, and task forces have provided a forum for input and discussion of each major project decision and activity. These groups, combined with frequent visits by the project staff, formal newsletter communications, and joint in-service training workshops are commendable as means of keeping project participants involved and well informed. Open communication lines can help a project avoid many problems and quickly solve many others. The structure and activities of the Florida Career Education Consortium have served well the functions of planning and communication. Some minor problems of role and personality conflicts have been identified, but progress is evident in solving these and they do not, at this time, pose any threat to project goals.

Implementation

In accord with developmental sequence, more project activities and resources will be devoted to the management function of implementation during the second operational year. It is now important for the CEC project to more clearly define its role in implementing career education programs. A wide range of roles are represented by present activities. At the district level, the CEC role has been one of consultant assistance, in-service training, and coordination of group activities. The central staff of the CEC project has not been involved to any extent in the day-to-day delivery of services directly to students. On the other hand, the CEC central staff has accepted responsibility for almost all phases of the implementation of placement and follow-up procedures at MJC. It is not clear in project documents which of these roles represents the "model" and which represents a temporary response to existing conditions. For smooth implementation of additional career education elements, it is important that the Consortium consider what its role should be and communicate this clearly to all involved. Consideration should also be given to what the structure and role of the Consortium will be when present developmental funding is exhausted.

In-service Training

There was considerable activity in the area of in-service training during the first year of the project and it is assumed that this will continue during the second year at a similar level. While the workshops conducted to date have each been beneficial to the project in their own right, they have not been parts of any defined sequence based upon needs and project priorities. Workshops were independently conceived and planned. The utilization of project resources for in-service training might be improved if more were done in the area of long range planning of in-service needs. Planning in-service programs at least a full year at a time would give the project an opportunity to weigh alternative workshops in terms of available resources and long range goals.

Internal Evaluation

Although the CEC project staff admittedly have little experience and expertise in evaluation, their efforts in this area are commendable. The project management is sensitive to the need for evaluation and continually seeks and utilizes feedback from a variety of sources. While project plans designate one person as having the major responsibility for internal evaluation, in reality, all of the central project staff have been involved in the design and implementation of evaluation activities related to their component and target group responsibilities. Project reports have included participant evaluations of workshops and newsletters. State-of-the-art and problem surveys have also been conducted.

Since the third party evaluation cannot provide adequate feedback to the project on each project activity or even each component-target group combination, it is essential that the CEC staff continue to carefully examine the effects of their activities through formal and informal evaluation strategies. As familiarity with the project increases and as informational needs arise, ETS may suggest specific studies or activities in the area of internal evaluation, but at the present time the level of project activity in this area appears adequate.

In examining the CEC project by target group level (elementary, secondary, postsecondary, etc.), it is evident that there has been an attempt to provide services to all on a relatively equal basis. While this strategy will serve to keep everyone happy, it is perhaps not the best utilization of project resources if, in fact, the project's goal is to establish a balanced and coordinated career education program at all levels. In establishing project priorities, both the status of present programs at various levels and available resources at various levels must be considered. In both considerations, the elementary and secondary level programs of the CEC have an advantage over postsecondary programs. The districts involved have full-time career education staffs not available in the postsecondary institutions. The districts have also been involved in a conscious effort to develop CE programs for a longer period of time.

To help postsecondary programs "catch up" to the developmental level of elementary and secondary programs, a larger share of CEC resources should be allocated to this target group level. This is not meant to imply that elementary and secondary programs are fully developed. They, too, have a long way to go. However, the CEC role at the elementary and secondary level can be one of coordination and consultant assistance with implementation more the responsibility of district CE staffs.

Programs in career education in private schools, in vocational-technical schools, and in other non-consortium institutions are also in a fledgling state. Within present Consortium resource limitations it is not realistic to expect fully developed programs in these institutions. However, the Consortium may serve as a catalyst through communications and joint in-service training to encourage these institutions to develop their own programs.

Project plans for the second year of operation imply a shift in priorities to a pattern congruent with the one suggested here. Future evaluations will examine the extent of changes in activities and subsequent effects.

Appendix A

Review of Student Assessment Reports

A Review of Student Assessment Reports Related to the Objectives of the Florida Career Education Consortium

Charlotte C. Rentz
Professional Associate

Educational Testing Service
Atlanta, Georgia
August, 1975

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Introduction

The purpose of this report is to describe and review the procedures and conclusions of two evaluation studies of career education conducted in Florida. During 1974-75 the University of South Florida (USF) conducted evaluations of the Career Education Projects in Manatee and Sarasota counties. Various reports were prepared by USF which focused on student data collected relative to the objectives of the Florida Comprehensive Program for Career Development. The descriptions, interpretations and conclusions presented in this report are based on information included in those USF reports for Manatee and Sarasota.

In addition to providing an interpretive perspective for the specific results and conclusions included in the University of South Florida reports, the present report will provide additional interpretations and conclusions regarding student responses and performance. Whenever possible cross-county conclusions are also included.

The reader can expect to find sections in this report devoted to discussions of a) student samples, b) procedures and instrumentation, c) variables and analyses, and d) results and conclusions. Sample sizes and sample composition, as well as the sample selection process are examined in the section on student samples. Brief descriptions of each instrument used for collecting student data are included in the procedures and instrumentation section. Independent and dependent variables included in the USF analyses are described in the section on variables and analyses. The student description variables used by USF in presenting group performance data are also identified in that section. The results and conclusions section includes a) a presentation and discussion of the USF results and conclusions, and b) additional interpretations and conclusions based on group performance data presented in the USF reports.

The following list identifies the USF reports examined in the preparation of this report:

Manatee County Career Education Evaluation Report No. 1:
    Middle School Students' Pre-Test Results
Manatee County Career Education Evaluation Report No. 2:
    Elementary Students' Pre-Test Results
Manatee County Career Education Evaluation — Final
    Report
Sarasota County Career Education Evaluation Report No 1:
    Junior High Students' Pre-Test Results
Sarasota County Career Education Evaluation Report No. 2:
    Elementary Students' Pre-Test Results
Sarasota County Career Education Evaluation Report No. 3:
    Pineview Pre-Test Results
Sarasota County Career Education Evaluation -- Final
    Report

Description of the Student Samples

A description of the sample and sample selection process provides important information for interpreting and generalizing results. This section attempts to provide information about the samples and sample selection process involved in the USF evaluation studies conducted in Manatee and Sarasota counties.

Sample size and sample composition data were examined in an effort to answer the following types of questions:

a) Were the samples large enough to allow stable results?

b) Was the loss of students because of incomplete data, or for other reasons such that one should be concerned about the representativeness of the sample?

c) Is there any reason to believe that the Manatee students and the Sarasota students cannot be considered samples from the same population?

The discussion of sample sizes will include information regarding the total sample sizes for each county as well as the sample sizes for each grade level. Sample composition data are described for the following independent variables used by USF in conducting analyses of covariance: sex, race, and occupation of the head of household.

Sample Selection and Sample Sizes

Manatee County student samples were selected from a) three experimental and three control elementary schools, and b) three experimental and three control middle schools. In all cases, a ten percent random sample was selected using students in each grade in each school as individual sampling frames. This means, for example, that ten percent of the students attending grade 1 in school A were randomly selected for the evaluation study. For each experimental and control elementary school, students were sampled at each of grades K, 1, 2, 3, 4, and 5. The reports specify that a total of 289 students were selected initially, and for 272 of those students, pre-post test data were obtained.

The middle school samples included students from grades 6, 7, and 8 in each of three experimental schools. The samples from the control middle schools involved sampling grade 6 from one school, grade 7 from another school, and grade 8 from still another school. The evaluation reports indicate that a total of 224 students were selected initially, and for 109 of those students, pre-post test data were obtained. This loss of 115 students is rather substantial, but at least 71 of those students were sixth grade students.

Sixth grade students in the middle schools were pre-tested with the same instruments that were used for seventh and eighth grade students. The experience of administering the pre-tests led to concluding that the tests were not appropriate for six graders, and therefore, six graders were excluded in the post-test data collection.

Sarasota County student samples were selected from a) three experimental and three control elementary schools, b) one experimental and one control junior high school, and c) grades 4 through 9 at Pineview. For the elementary and junior high school samples, a ten percent random sample was selected using students in each grade in each school as sampling frames. For each experimental and control elementary school, students were sampled at each of grades K through 6. The reports specify that a total of 455 students were selected initially, and for 406 of those students, pre-post test data were obtained. For each experimental and control junior high school, students were sampled at each of grades 7, 8, and 9. The evaluation reports indicate that a total of 211 junior high school students were selected initially, and for 169 of those students, pre-post test data were obtained.

Since Pineview is a school for gifted students, the design for data collection and analysis was different from that involved in the study for other school samples. The design was one involving pre-post comparisons only rather than comparison to a control group. A ten percent random sample of all students was selected, yielding a sample of 29 students in grades 4 through 9. For all 29 students, partial or complete pre and post-test data were obtained.

Based on inspection of the tables presented in the USF reports, several points seem appropriate for mention. Although the original Manatee middle school sample size reported was 224, Table 1 of the pre-test results report shows partial or complete pre-test data on only 217 students. Similar data are evident from Table 1 of the junior high school pre-test results report from Sarasota County. Although the original Sarasota junior high school sample size reported was 211, apparently partial or complete pre-test data were obtained on only 205 students.

A rather curious discrepancy in sample sizes appears when one inspects Table 1 of the Manatee elementary school pre-test results report. That particular table indicates that partial or complete pre-test data were obtained for 328 students. This number is larger than the original sample size of 289 reported elsewhere in that report. This curious phenomena also appeared in the Sarasota elementary school reports. Table 1 of the Sarasota elementary school pre-test results reports indicates that partial or complete pre-test data were obtained for 485 students. This number is larger than the original sample size of 455 reported elsewhere in that report.

The discrepancies, when one compares original sample sizes with the size of samples for which both pre and post-data were available, indicate some loss of students from the sample. Some loss could be expected as a result of students leaving school or transferring, etc. Discrepancies also existed when the original sample sizes were compared against the sample sizes on which pre-test data were reported. These discrepancies for the elementary school samples in Manatee and Sarasota are quite disturbing and most unfortunate. With respect to the discrepencies between pre and post-testing, this writer would like to view the loss of students as being a "random" loss that did not lead to a biased sample. The USF reports do not include explanations of the losses.

No data were presented to indicate the sample sizes for experimental and control groups separately, for either the Manatee or Sarasota county study. Because of the sampling procedures used in Manatee, however, it is assumed that the experimental students out-numbered the control students.

Grade level sample sizes, as such, did not appear in the USF reports. The USF reports did include tables of means, however, and these tables indicated the number of students in each grade level for which post-test data were available. One may assume that students, for whom post-test data were reported, would not have been tested in the spring of 1975 unless they had also been tested in the fall of 1974. Therefore, the grade level sample sizes upon which post-test means were based, were used as an indicator of the number of students in each grade level for whom both pre and post-data were collected. For Manatee elementary schools, grade level sample sizes ranged from 32 to 56. For Sarasota elementary schools, grade level sample sizes ranged from 27 to 79. Generally, the smallest sample sizes appeared at the lower grade levels. Both grades 7 and 8 for Manatee middle schools had between 50 and 60 students. Sample sizes for Sarasota junior high grades ranged from a low of 48 at grade 7 to a high of 58 at grade 9. Grades 4 through 9 were sampled at the Pineview School, with sample sizes of 2, 4, 3, 6, 9, and 5, respectively.

With the exception of the grade level sample sizes at Pineview, the number of students sampled at each grade level seem reasonably adequate for providing rather stable results for the group preformance data that were presented for grade levels in the USF reports.

Sample Composition

The relative frequency of various classifications of students is presented in this section. Sample composition with respect to sex, race, and occupation of head of household will be described.

Sex. Some idea of the relative frequency of males and females in the samples was possible by inspecting tables with male and female group data shown separately. The proportions of males and females in all elementary grades for both counties were quite similar. For the Manatee middle schools, there were between 1 1/2 to 2 times more males than females. A slightly larger proportion of females than males were included in the Sarasota junior high school sample. No information was available for the male-female composition of the Pineview sample.

Race. In Manatee County, the samples included approximately three times more anglos than blacks. For the elementary schools, this proportion appears to hold for all grade levels. On the other hand, the Sarasota samples included even larger proportions of anglos relative to blacks. Considering all grade levels at the elementary schools, the Sarasota sample included approximately 15 times more anglos than blacks. This proportion, however, varied somewhat with grade; grade samples ranged from 8 times more anglos to 21 times more anglos than blacks. The Sarasota junior high sample included slightly more than 6 1/2 more anglos than blacks.

As will be evident later in this report, the relative proportion of anglos and blacks presents some problems in drawing conclusions about group performance in Sarasota. In some cases, the data on black students were based on such small sample sizes, the data should be considered very unstable.

Occupation. Some data on sample composition were also available for one additional independent variable considered in the evaluation study. Tables presented in the reports give some ideas about the composition of samples with respect to the occupation of heads of households. For the Manatee elementary school sample, the highest frequency for occupations of head of household was for skilled occupations. In decending order of frequency, this was followed by semi-skilled and laborer occupations. Skilled occupations were most highly represented at all grade levels.

The highest frequency for the Manatee middle school sample was for the semi-skilled occupations. This was followed, in descending order of frequency by skilled and laborer occupations. The data on occupation of the head of household for the Middle school sample, however, were based on only 65 of the 109 students in the post-test study.

For the Sarasota elementary school sample, the highest frequency for parental occupation was for skilled occupations. This was followed, in descending order of frequency, by semi-skilled and professional occupations. The highest frequency varied by grade level, however the highest frequency for a particular grade sample was generally one of these three. For the Sarasota junior high students, the highest frequency was for skilled occupations, followed by professional and then semi-skilled occupations.

Sample composition with respect to the occupation of the head of household was somewhat different in the two counties. The Sarasota county sample included higher relative proportions of students whose parental occupations were classified as professional.

Summary and Comments

The sample selection process was such that representative samples should have resulted. The sample composition data should, therefore, provide reasonable descriptions of the school populations in Manatee and Sarasota counties. Although the data also indicate some differences in the student populations in the two counties, such differences would not lead one to expect differential student outcomes on the basis of population differences alone.

Sample composition with respect to race and occupation of head of household resulted in very small sample sizes for some of the classifications. With such small sample sizes the data were very unstable and it was therefore difficult, in some cases, to draw conclusions about performance.

It is evident that, during the course of the study, students were lost from the sample. Pre-test data were not available on all the students that were originally selected. Post-data were not available for all students who were pre-tested. Even though there is no evidence in the USF reports that attritions were biased on any of the identified independent variables, the rate of attrition and the resultant small sample sizes at post-testing produced, in some cases, unstable or misleading post-test results.

Procedures and Instrumentation

Testing and other data collection for students in the samples in both Manatee and Sarasota counties occurred in October 1974 and in May 1975. These data collections are identified as the pre-testing and post-testing, respectively. The Project Director took responsibility for local testing arrangements and test administration. The evaluation reports do not specify who actually administered the tests and whether there were any differences in procedures in the experimental and control schools. The preparation of test packets and the orientation of "project staff" in the use of the tests, as well as the scoring and analysis was done by the Evaluator.

Instrumentation

A number of instruments were developed or adopted for use in the evaluation studies of Career Education in Manatee and Sarasota counties. The following will briefly describe each of the instruments used and indicate which instruments were used for data collection for each sample. The discussion of the various instruments includes references to career education objectives. These objectives are the Federal Guideline Objectives reported in Appendix A of the Second Quarter Report of A Comprehensive Program of Vocational Education for Career Development: K-University.

Instruments used for both Manatee and Sarasota elementary school samples include the following: a) Career Achievement Test, b)

Teachers Inferred Self-Concept Scale, and c) Student Information Sheet-Elementary. Level I of the Career Achievement Test was administered to students in grades K through 2 in both counties. Level II was administered to grades 3 and 4. Level III of the Career Achievement Test was administered to grade 5 in Manatee County and grades 5 and 6 in Sarasota County.

The instruments administered to grades 6 through 8 in Manatee middle schools and grades 7 through 9 in Sarasota junior high schools included the following: a) Career Maturity Inventory, b) Rotter's Revised Scale of Locus of Control, c) Rosenberg's Self-Esteem Scale, and d) Student Information Sheet-Secondary. After pretest data were collected, the Career Maturity Inventory was judged inappropriate for grade 6, and therefore the grade 6 sample in Manatee County was not post-tested and was dropped from the study.

The Career Achievement Test (CAT) was "developed specifically for measuring the objectives for career education set forth in the Florida Career Education Model and the National Standard Career Education Model". The CAT has three levels and each level has two forms. Form A of each level was used for pretesting and form B for post-testing. Level I was administered to grades K through 2, Level II to grades 3 and 4, and Level III to grades 5 and 6. Level I contains 30 items, Level II has 40 items, and there are 38 items in Level III. All items are of multiple-choice format.

An ETS review of CAT Level III, Form B indicates the test concerns general information about careers and work behavior, and apparently it touches lightly on a number of objectives for the Career Education Projects in Manatee and Sarasota. The test reviewer found at least a partial relationship between the test and the following objectives:

1. Students will recognize the bases of various work values,
2. Students will possess positive attitudes towards paid and unpaid work,
3. Students will know entry requirements for major types of paid and unpaid work,
4. Students will know the important factors associated with various work roles.

The reviewer, however, concludes that the test (especially if the total test score is used) does not seem to relate clearly to any specific objective.

Since no information was found to indicate the equivalence of Forms A and B, the results of pre-post data analyses, involving one form for the pre-test and the alternate form for the post-test, cannot be interpreted unambiguously. A comparable problem occurs if one attempts to interpret differences in performance from one test level to another.

The Teachers Inferred Self-Concept Scale (TISCS), which was developed at a university in Florida, requires the teacher to rate a student on 15 items, using a five point scale. The TISCS yields a total score (maximum score = 75) in addition to three subscale scores:

Self = the way the individual sees himself,
Others = the way others see the individual,
Community = the way the individual sees others.

A higher score, in all cases, indicates a more positive perception. Teachers of elementary students completed the same form in the fall and again in the spring.

The Career Maturity Inventory (CMI) is a test battery which includes an attitude scale (CMI-ATT) and a competence test (CMI-C). The CMI-C contains five subtests and yields a score for each subtest. The competence total score is the sum of the five subtest scores. The subtests are as follows: C1) Knowing Yourself, C2) Knowing About Jobs, C3) Choosing a Job, C4) Looking Ahead, and C5) What Should They Do? These subtests may be thought of as providing measures of self-appraisal, occupational information, goal selection, planning, and problem solving. In each of the competence subtests, hypothetical situations are presented and the student is asked to choose one of five alternatives.

The attitude scale "elicits the feelings, the subjective reactions, the dispositions that the individual has toward making a career choice and entering the world of work". The ETS review found a relation between the attitude test and the following career education objective: "Students will demonstrate active involvement in career decision-making". The C1 subtest was found related to "Students will be able to describe their own current abilities and limitations". The C2 subtest relates to "Students will know the major duties and required abilities of different types of paid and unpaid work". The C3 subtest relates to the following objective: "Students will be able to associate their own abilities and limitations with possible success in present or future paid and unpaid work". The subtest C4 relates to "Students will know the steps to be taken and the factors to be considered in career planning". The C5 subtest was found to be related to both of the following objectives: "Students will be able to demonstrate generally useful decision-making skills", and "Students will be able to identify, locate, and utilize sources of information to solve career decision-making problems". The reviewer, however, concluded that the subtests don't measure these objectives exactly, and at least for the attitude scale, the total score reflects a combination of "different, and possibly unrelated objectives". Only one form of the CMI is available, therefore students were administered the same form in both fall and spring.

Rotter's Revised Scale of Locus of Control is a measure of the degree to which an individual views what happens to him as being related to his own actions (internal control) versus being related to other forces such as luck, chance, powerful others, etc. (external control). The scale consists of eleven items, each of which is given a score of one to four. Lower scores indicate internal control and higher scores indicate more external control. The locus of control measure relates most strongly to "Students will have a positive attitude towards responsibility for their own behavior and accomplishment of self-imposed work tasks", and it is suggested that it also relates, somewhat peripherally, to different aspects of self-awareness. In some of the USF reports this measure is also referred to as Rotter's Scale of Internal-External Control. The USF reports include group performance data for a variable called locus of control, operationally defined as the total score on the Rotter's scale. Additional information regarding this instrument is available in the ETS test review.

Rosenberg's Self-Esteem Scale is a ten item self-report instrument which indicates the student's attitude toward himself, and as such, relates to the objective "Students will display positive attitudes toward themselves". Each item is answered on a four point scale ranging from strongly agree to strongly disagree. Although each item has four response options, the items are scored either positively or negatively. Some of the items are combined such that total scores range from 0 to 6. Higher scores denote a higher self-esteem. In some of the USF reports this measure is also referred to as Rosenberg's Self-Concept Scale. The USF reports also include group performance data, for middle school and junior high school samples, on a variable called self-concept, operationally defined as the score on the Rosenberg's Scale.

The Student Information Sheet - Elementary (SIS-E) is an eleven item questionnaire used to obtain background and other information about students in the sample. Completed by the teacher, the questionnaire asks about a student's grade, sex, and race. Other items ask for the occupation of the head of the household, the student's IQ score, and the student's reading score. In addition, the teacher was asked to rate the student, on a ten point scale, on three variables: a) self-concept, b) academic performance, and c) interest in school. It should be pointed out that, although IQ and reading scores were requested, these data were not included in the analyses. It is possible that the evaluator questioned the validity of the data, as would this writer. However, it is also possible that teachers were not willing and/or able to provide the requested information.

The Student Information Sheet - Secondary (SIS-S) is a two part questionnaire used to obtain background and other information about students in the middle school and junior high samples. The first part consists of nine items completed by the student and items ask for information about the student's sex, race, length of residence in the county, plans to attend college, attitude toward school, work experience, and certainty about the future. The second part, completed by the student's teacher, asks for the occupation of the head of household, the student's IQ score, and the student's reading score. Previous comments regarding the IQ and reading scores requested on SIS-E apply here also. The reader is referred to the ETS test reviews for additional comments on the SIS-S.

Comments and Recommendations

The TISCS was administered in both the fall and spring. Although group performance on the TISCS is presented tabularly in the USF reports, no analyses of covariance were performed using data from this instrument. One cannot help but wonder why these data, as well as other teacher report data for elementary students (see SIS-E), were not included in the covariance analyses.

Both the SIS-E and SIS-S requested information which was not included in covariance analyses and which did not appear in any group performance tables in the USF reports. If data are not to be used, or if questionable validity and reliability is indicated, there are no apparent reasons why requests for such data should be made. It is also suggested that one should look very carefully at the reliability of items such as those included on the Student Information Sheet.

The matching of tests and test items to career education objectives is an important problem requiring attention. This is an ever present problem whenever there is an attempt to use "off the shelf" tests. For both the CAT and the CMI, the ETS test reviews suggest scoring only those items that relate directly to an objective and/or tailoring specific subscales for the various objectives measured by the test. If no other reasonable option presents itself, consideration might also be given to reporting performance separately for each item identified as a match to a particular objective. Probably only as a last resort should new tests be developed; such a process is generally too expensive and time consuming to be feasible for reasonably small projects.

The ETS reviews provide suggested alternatives to the instruments used in 1974-75. Instruments used in the 1974-75 evaluation, as well as other available instruments measuring similar concepts, have also been reviewed by ETS in preparation for the FY 76 evaluation of the project. That review process included not only the examining the evidence of technical quality for the instrument, but also examining the match between career education objectives and items or item sets, and subtests or scales. Such an examination has obvious implications, insofar as allowing interpretation of results as indicating the effect of career education program efforts, or indicating whether the observed results match the expected results if career education objectives were met. It is possible that the problems of the match between instruments and objectives explain why the USF reports included discussion of results only in terms of performance on instruments, and did not include discussion of results in terms of specific career education objectives. It is reasonable to expect that all objectives will not be met to the same degree, and that it would be important to know where those differences occurred and whether that differences match differences in the "amount of effort" directed toward those objectives.

Variables and Analyses

The major concern identified in the USF reports was one of determining whether students in the experimental schools demonstrated higher performance on the post-test than students in the control schools. Experimental and control schools were identified by the Career Education Project Director and members of the administrative staff. Control schools were selected on the basis of being similar to the experimental schools in terms of "the ability of the students and the quality of the staff". The Pineview school study involved pre-post test comparisons without a control group.

In addition to attempts to investigate experimental versus control group differences, the USF reports indicate that attempts were made to determine if sex, race, or occupation of head-of-household had an effect on performance on the post-test. For the Sarasota samples, the data were also analyzed to determine if involvement of the students in the project (i.e. "involvement") had an effect on performance on the post-test. This writer has not been able to determine the source of data for the variable involvement of the students in the project, however, the USF reports indicate that the classification on this variable was different from the experimental vs. control group classification. These variables were considered the independent variables in a series of analyses of covariance. It is not obvious why these specific variables were selected as the independent variables, but it will be assumed that there are theoretical, empirical or programmatic reasons for their selection.

The source of data on sex, race and occupation of household was the Student Information Sheet. Apparently, so few students fell into racial classifications other than anglo or black, that only those two classifications were used as levels of the variable race, when analyses of covariance were performed.

Because differing levels of the Career Achievement Test were administered to elementary students, the elementary school sample was divided into grade groupings for purposes of analysis (i.e., analysis samples). This resulted in three analysis samples for each elementary sample. For Manatee elementary schools, the analysis samples were defined as a) K through grade 2, b) grades 3 and 4, and c) grade 5. For the Sarasota elementary school sample, the analysis samples were a) K through grade 2, b) grades 3 and 4, and c) grades 5 and 6.

The dependent variable(s) for each analysis sample varied as a function of the grade level(s) of the students in the sample. In all cases, the fall score on the variable was used as the covariate and the spring score was considered the dependent variable.

Eleven dependent variables were included for analyses involving middle school and junior high school samples. Student data on the like for school and the certainty about the future variable were obtained from the Student Information Sheet-Secondary. Students indicated their like for school by choosing one of the following options: 1) a lot, 2) it's OK, 3) mildly dislike, or

4) strongly dislike. It is assumed that the data were analyzed using a system which assigned a 1 to the response "a lot", 2 to "it's OK', etc. Certainty about the future was assessed by analyzing student's responses to the question "How sure are you about what you want to do in the future in terms of work, marriage, college, etc?" Very sure was assigned a 1, sure a 2, 3 referred to not too sure, and 4 indicated very undecided. Lower scores for the like for school variable indicated more like for school, and lower scores for the certainty about the future variable indicated greater certainty.

From the administration of the Career Maturity Inventory, seven scores were obtained and analyzed. The total score on the CMI-ATT was used as one dependent variable. The total score for the CMI-C plus five subscores were separately analyzed as dependent variables. The subscores refer to the five competence subtests previously described in the section on Procedures and Instrumentation. The locus of control dependent variable was operationally defined in terms of the Rotter's Revised Scale of Locus of Control. Lower total scores on this scale indicate more internal control. The self-concept dependent variable scores were obtained from the Rosenberg's Self-Esteem Scale. Higher scores denote a higher self-esteem.

For each analysis sample, each independent variable was separately combined with each dependent variable, and analyzed using analysis of covariance. For Manatee elementary school samples, this resulted in 12 separate analyses. Using four independent variables and eleven dependent variables, 44 analyses were applied to Manatee middle school sample data. Fifteen and 55 analyses were completed for data from Sarasota elementary school samples, and the Sarasota junior high sample, respectively. A total of 129 analyses of covariance were completed for Manatee and Sarasota County student samples.

For Pineview students, pre-post comparisons were completed for each of the following measures: CMI-ATT, CMI-C1, CMI-C2, CMI-C3, CMI-C4, CMI-C5, CMI-C Total, Locus of Control, and Self-Concept. It is not clear whether statistical analysis techniques were applied in making pre-post comparisons, nor is it clear whether data from all or some grade levels were combined for purposes of making the comparisons.

With the exception of the variable "involvement", it seems reasonable to suspect an interaction effect for the independent variables. Of special importance would be any interaction of each independent variable and the group membership (i.e., experimental vs. control). Sample sizes were probably not large enough to allow the use of a factorial design in which all independent variables were used in the same analysis. It might have been possible and, in this writer's view, preferable to do two-way analyses of covariance in which group was always one of the independent variables. If interactions were present, the one-way analyses, as used in the USF study, would not detect them.

Unfortunately, this writer was unable to determine the meaning of the variable "involvement of the students in the project". A first thought is that it defines degree of exposure to career education programming efforts. If this is the case, the question arises as to whether only experimental group students were classified according to this variable or if both experimental and control group students were so classified. Because of "spill over effects" and "diffusion effects" of implementing new programs, such a variable might be more meaningful than a variable having only two levels, i. e., one level referring to "experimental" and one referring to "control".

Group performance data were calculated and presented tabularly in each report. These data were organized in several different ways "to facilitate the detection of differing levels of .... performance for differing types of students". Group performance data were calculated and presented for different types of students, by using the following student description variables: a) grade level, b) sex, c) race, d) occupation of head of household, e) college plans, f) like for school, g) employment experience, and h) certainty about the future. No data were presented for experimental vs. control group performance. A total of 146 tables were presented for the pre-test and post-test performance of students in the Manatee and Sarasota samples. The samples for whom data are presented in the post-test results reports are not identical to those for whom comparable data are presented in the pre-test results report. In some cases, this situation made it impossible to draw conclusions about the pre to post-test stability of relationships found in the fall of 1974.

Results and Conclusions

The results section of each report on pre-test results included the presentation of group performance data tables and a brief description of "notable differences" and interesting relationships indicated from inspection of the data. Summary conclusions appeared in each report. Some of the conclusions presented in the USF reports are also discussed in this review, and an attempt has been made to integrate the conclusions from the separate counties. Attention is also given to USF conclusions for which noncritical acceptance might not be appropriate.

Group data for the post-test performance were also calculated and presented. The tabular organizations was practically the same as that used for presenting pre-test data. In the post-test reports, however, these data were not described and conclusions were not reached and presented. This report attempts to examine, based on both the pre-test and post-test data, whether relationships and patterns of performance observed in October remained constant during the 1974-75 year.

USF Results and Conclusions

The reported results and conclusions in the USF post-test reports were based on the analyses of covariance that were performed. Although no tables were presented to show the results of these analyses, the report does indicate how many and which ones of the analyses showed statistically significant effects. The USF results for Manatee and Sarasota samples are indicated below, including the results reported for the pre-test post-test comparisons completed for the Pineview students.

Manatee Elementary Samples. Of the 12 covariance analyses conducted, two showed a statistically significant effect at $p < .01$. In both cases, race was the significant source of variation. Anglo students performed significantly higher than black students on the Career Achievement Test. This difference was found when data from the kindergarten - grade 2 sample were analyzed and also when data from the grade 3 and 4 sample were analyzed.

Sarasota Elementary Samples. Fifteen analyses of covariance were conducted and one showed a statistically significant difference at $p < .01$. The kindergarten - grade 2 experimental group sample performed significantly higher than the kindergarten-grade 2 control group sample. This was the only case reported in which experimental versus control group differences were found.

Manatee Middle School Sample. Two of the 44 covariance analyses indicated a statistically significant difference in performance for the groups being compared ($p < .01$). Anglos performed significantly higher than blacks on the Career Maturity Inventory Attitude Scale, and females performed significantly higher than males on CMI-C1.

Sarasota Junior High Sample. None of the 55 analyses of covariance showed a statistically significant effect.

Sarasota - Pineview Sample (s). Actual pre-test versus post-test performance data were not presented in the USF final report; only post-test group performance data were presented. The report does indicate there were "no clear, consistent differences between performance on the pre-tests and that on the post-tests. The same general patterns of response observed on the pre-test were observed on the post-test."

The USF final reports for Manatee and Sarasota counties contain identical conclusions: "there were no apparent differences in performance of students exposed to career education and those not exposed to career eeucation". The report continues, "The most immediate explanation of these results is that being exposed to career education does not effect students in significant ways. However, there are some alternative explanations which should be considered". These alternative explanations identified in the USF reports are presented below:

1. The control schools might have also exposed their students to career education, so that control-experimental group comparisons would not reflect the effects of exposure to career education.
2. Career education may have had an effect on students, but not in terms of the objectives measured by the instruments used in the evaluation.
3. Career education may never have been instituted in the experimental schools, such that students never really received the "treatment".

4. The students may have received the "treatment", but the time period may have been too short to produce any significant change. Differences may appear after two or three years which were not apparent this year.

With 129 analyses and $p < .01$ set for the significance, if all analyses can be considered as belonging to the same experiment, at least one significant effect could occur by chance. Although the USF analyses resulted in one significant effect for group, the evaluator rightly concludes that there were no apparent differences in performance of students in experimental and control groups.

It seems appropriate, at this point, to comment on the alternative explanations for the results that were identified in the USF reports. Explanations #1 and #3 are closely tied together and refer to what this writer would call the "existence and integrity of the independent variable", where the independent variable is group. Without variance a variable does not exist, and without systematic variance, relationships cannot be observed. In order to examine the effects of a treatment, it is necessary to establish, by some appropriate means, that the treatment is, in fact, occurring. Whether "spill over" has occurred or not, if one wants to evaluate the possible differential effects of being exposed to a treatment as opposed to not being exposed to that treatment, it is necessary to establish that the two experiences are, in fact, different in some meaningful way(s).

It is quite possible that the "degree of implementation" of the treatment may vary within the treatment group (e.g., teacher variation, school variation, etc.) and/or that exposure to varying degrees of the treatment has occurred in both "experimental" and "control" groups. Perhaps, instead of defining experimental and control groups, a better procedure might involve defining a number of treatment groups, based on variation in the degree or type of treatment exposure. Whatever procedure is used, however, it is necessary to establish that a treatment is occurring, and, if treatment group is a variable, that the treatment differs from one group to another. At the very least, a description of the "treatment" in each group would be needed, in order to interpret "resulting" differences or lack of differences in student performance.

All four alternative explanations listed in the USF reports, represent plausible hypotheses for explaining the results. Future studies should certainly involve attempts to eliminate or reduce the plausibility of these explanations as rival hypotheses.

Additional Interpretations and Conclusions

Additional analyses, interpretations and conclusions with respect to the "treatment" group variable are not possible because separate experimental and control group data were not available in the USF reports. It is possible, however, to provide additional information on other variables that should be helpful in interpreting and extending that provided by the USF reports.

Because of differences in the population and the career education programs in Manatee and Sarasota counties, no attempt was made to combine results directly. However, when similar relationships and patterns of performance are observed for both counties, it seems reasonable to draw a single conclusion that could be expected to apply to either or both counties.

The USF pre-test results reports suggest that pre-test results would be used for program planning decisions. If such decisions were made, two questions could be asked. First, do the data support the initial conclusions upon which decisions were made. Secondly, were the resulting programming activities "successful" in changing the patterns of performance observed in the fall. The following presentation will therefore focus on the validity and stability of relationships between variables and patterns of performance that were reported in the fall of 1974.

Results and Conclusions for Elementary School Samples

Patterns of performance for the elementary school samples are discussed below. Validity and stability findings are organized around main headings that were used for presentation of results in the USF reports.

Patterns of Performance by Grade Level. For both Manatee and Sarasota elementary samples, both pre and post-test data indicate no grade level differences for teacher ratings of students on self-concept, interest in school, and academic achievement, nor for teacher ratings on the TISCS. For both counties, however, the USF pre-test results reports state that performance on the Career Achievement Tests increases with higher grade levels. An inspection of Table 1 in each pre-test report reveals that the mean value for CAT performance for a grade level sample was not always larger as the grade level increased. One should remember, however, that K - 2nd grade students took Level I, 3rd and 4th graders took Level II, and 5th and 6th grade students took Level III of the CAT. Within Levels I, II, and III, the mean CAT score increased as grade level increased, for both counties. This increase, although very small in some cases, was found for both the pre-testing and post-testing scores.

Patterns of Performance by Sex. On all measures, the relationship between sex and performance remained constant during the year. In the fall and again in the spring, teachers in both counties rated girls higher than boys on every measure on the SIS-E and the TISCS. The lack of significant effects for sex in the analyses of covariance also indicates that the relationship for the CAT did not change from the pre-test to the post-test. Third and fourth grade Manatee females performed higher than males on the CAT; no sex differences occurred at other grade levels. Sarasota males, however, scored slightly higher than girls on the CAT at five grade levels.

Patterns of Performance by Race. In the fall of 1974 and again in the spring of 1975, teachers in both counties rated anglos higher than blacks on every measure on the SIS-E and the TISCS.

The USF reports indicate that on the pre-test Sarasota and Manatee anglos performed higher than blacks at every grade level on the CAT. In addition, in Manatee, the differences in scores were found to become larger at the higher grade levels. The analyses of covariance indicated a significant effect, in Manatee county, for race on the CAT Level I (grades K - 2) and Level II (grades 3 and 4). For grades K - 4, in Manatee, the initial pre-test difference between anglo and black students was even greater on the post-test. Although race was not a significant effect for the other Manatee and Sarasota samples, the post-test anglo-black mean differences were also larger than the pre-test anglo-black mean differences.

Patterns of Performance by Occupation of the Head of Household. The USF studies reported that, in both Manatee and Sarasota counties, students from "higher" occupational groups were rated more favorably on the SIS-E and TISCS measures, and they scored higher on the CAT. The group performance data generally support that statement of the relationship between occupation of the head of household and performance on the CAT pre-test. There are exceptions, however, but most are associated with quite small sample sizes (and therefore relatively unstable measurements). The lack of significant effects for occupation in the analyses of covariance indicates the relationship between occupation and CAT performance did not change as a result of experiences intervening between pre and post-testing. A similar lack of change occurred for ratings on the SIS-E and TISCS measures.

Results and Conclusions for Middle and Junior High Samples

Patterns of performance for the Manatee middle school students and the Sarasota junior high students are discussed below. Validity and stability findings are organized around headings that were used for presentation of results in the USF reports.

Patterns of Performance by Grade Level. For both the pre-test and the post-test, performance on the various sections of the CMI generally increased with increases in grade level. Grade level performances, however, were quite similar for the locus of control and self-concept measures. These relationships between grade level and performance on the various measures were observed for both the Manatee middle school and the Sarasota junior high samples.

Approximately 80% of all students at each grade level in both counties planned to attend college in the fall. With the exception of Manatee 7th graders, the USF reports indicated small proportions of students in each grade level planned to attend college in the spring. Because of changes in the sample from fall to spring (especially loss of students) this may not reflect any difference in student's plans, but only differences in the sample.

Although the USF studies reported no notable grade differences in like for school for Sarasota students, there is a statement that for Manatee County, 7th graders had the least like for school. Data included in Table 3 of the pre-test report suggest that the least like for school occurred for 6th graders rather than 7th graders. In both counties, there was some tendency for the students, whose data are included in the post-test report, to express less like for school. It should be emphasized again, however, that the spring sample size is smaller and the fall to spring differences may more closely reflect differences in the sample than differences or changes in students' attitudes.

Patterns of Performance by Sex. Manatee and Sarasota females scored higher than males on all sections of the Career Maturity Inventory. The relationships between sex and performance on the CMI remained relatively constant for all cases except the one involving Manatee students and the CMI-C1. On CMI-C1, females performed significantly higher than males on the post-test even after the pre-test scores were adjusted for initial differences.

The USF reports state that Manatee males scored higher than females on the locus of control and self-concept measures, and Sarasota males scored higher on the self-concept measure. Based on additional analyses, however, it was found that Manatee females scored significantly higher ($p <.05$) than Manatee males on the locus of control, and the male-female difference on the self-concept measure was not significant. The Sarasota conclusions are supported by the data. Because the analyses of covariance resulted in no significant effects for sex on these measures, it is then possible to conclude that the relationships just described for the pre-test data remained constant from fall 1974 to spring 1975.

The relationship between sex and expressed like for school and between sex and expressed certainty about the future, can be considered constant during the 1974-75 school year. The lack of significance in the analyses of covariance support such a statement. The pre-test data indicate Manatee females expressed more like for school than Manatee males, but Sarasota males and females expressed approximately the same degree of like for school. In both counties, males expressed more certainty about their future than females.

Patterns of Performance by Race. The only situation in which the relationship between race and the dependent variable did not remain constant during 1974-75 was for Manatee middle school students' performance on the CMI Attitude scale. Although, on the pre-test and post-test, anglos scored higher than blacks, in both counties, this initial difference still did not account for the difference on the post CMI attitude for Manatee. There were no apparent differences between anglos and blacks on the locus of control and self-concept pre-tests. This relationship was maintained and validated on the post-tests.

In the fall of 1974, Sarasota black students expressed more like for school than their anglo classmates. Racial differences in like for school in Manatee were not quite so striking and possibly indicate no real difference. The relationship between race and expressed like for school was apparently not changed as the result of experiences during the school year. It should be noted, however, that the information on like for school for Sarasota blacks was based on only 21 students whereas there were 157 anglos in the sample.

Sarasota black students expressed more certainty about their future than anglo students. In Manatee there were no striking differences in certainty about the future. These relationships which were observed on the pre-test remained constant for the post-test.

Patterns of Performance by Occupation of the Head of Household. Sarasota students whose heads of household were in the "professional" or "skilled" groups performed higher on the CMI pretests than students from other occupational groups. Manatee students whose heads of household were in the "skilled" group demonstrated the highest performance on the CMI pretests. These relationships between occupation of head of household and CMI tests remained constant from pre-test to post-test.

A large percentage of the students in each occupational category, in both counties, expressed like for school. The results of the analysis of covariance indicate that experiences during 1974-75 did not affect the relationship between occupation and like for school that existed in the fall of 1974.

Summary. In general the data support the USF pre-test conclusions. Only two situations were identified for which the data were clearly not in agreement with those conclusions. Both situations involved conclusions about Manatee middle school students. In one case, the data were not in agreement with the USF conclusion regarding the grade level with the least like for school. The other case involved a conclusion about the relationship between sex and scores on the locus of control and self-concept measures.

For a number of the relationships examined and discussed, for both pre-test and post-test data, group differences were quite small. Even though small differences may be statistically significant, the question of whether those small differences are meaningful differences cannot be answered by statistical analysis.

With minor exceptions, the relationships between variables and the patterns of scores that were present at the time of pre-testing were also found to be present at the time of post-testing. This means that the experiences provided for students during 1974-75 did not change their patterns of performance. In each case where a significant effect was found in the analysis of covariance, the group that scored higher in the fall also scored higher in the spring, however, the spring differences in performance were substantially greater than the fall differences.

The descriptions, interpretations, and conclusions presented in this ETS report serve to supplement and extend those provided by the University of South Florida reports. The ETS conclusions are quite consistent with those reached by the USF evaluator.

Appendix B

Instrument Reviews

Career Education Achievement Test (level III, Form B)

General description:	This 38 item multiple choice examination concerns general information about careers and work behaviors. Although there are other levels and forms of this test, only level III, Form B will be reviewed.
Administration time:	Approximately 20 to 30 minutes.
Scoring time:	About 2 to 3 minutes per answer sheet if scored by hand.
Grade levels for which instrument is appropriate:	Language seems to be geared at about an eighth grade level although younger grades could understand the items and responses if the exam were administered orally.
Technical quality:	This instrument is unpublished, therefore, no information regarding its reliability or validity is available.
Relationship to program objectives:	The test does not seem to relate clearly to any specific objective but appears to touch lightly a number of objectives. The test relates to both objectives A and B under III although the total score for the test probably does not adequately measure accomplishment of these objectives. There is also a partial relationship between the test and objectives IV-C and E.
Use of subscales:	None are present.
Recommendation:	One of the main problems with this test is interpreting its results. If student A scores higher than student B, that does not necessarily mean that student A possesses more "positive attitudes towards paid and unpaid work," nor does it mean that student A will have a more "positive attitude toward the concept of quality in relation to a work task." The problem, of course, is that the test is a general paper and pencil measure and the program objectives it attempts to measure seem to require specific observational or performance measures. For example, objectives like IV-C and E can only be measured by direct observation. On the other hand it is extremely difficult to measure objectives like A and B under III in any way other than by individualized assessment. Many of the items are trivial - e.g., numbers 6, 7, 17, 23, and 29. Other items appear somewhat controversial - e.g., 5 and 29. This test should be substantially revised, eliminating the trivial items, constructing better item responses - in some cases you can tell the correct answer without reading the item - and tailoring specific subscales to the program objectives.
Suggested alternatives:	Suggested alternatives are listed under Career Maturity Inventory.

Teachers inferred self-concept scale

General description:	This is a 30 item scale where teachers note the incidence of student behavior on a five point scale ranging from "never" to "always." The behaviors described are said to relate to the students self-concept. Typical items on which students are rated include: "Thinks he is right," "Appears unsociable," and "Is defiant."
Administration time:	The teacher completes one form for each student. It would require a teacher 5 to 10 minutes to conscientiously answer the questionnaire for a student.
Scoring time:	About 1 minute per form.
Grade levels for which instrument is appropriate:	The scale was originally developed for students in grades one through six.
Technical quality:	When counselor and teacher ratings (total scores) for 180 students were correlated, the coefficient found was .50. Split-half reliabilities of .86, .86, and .90 have been found by counselors, teachers, and both combined. Coefficient alpha was .92 for counselors and .91 for teachers. On the other hand, test-retest reliabilities with a six-month interval has been found to be .66. Judges rated 100 items on their appropriateness as self-esteem indicator. Six of the eight judges agreed on 37 items being appropriate. Seven items were eliminated as being redundant. Scores have been found unrelated to age, but were weakly related to scholastic achievement, intelligence, and negatively related to competency.
Relationship to program objectives:	This self-concept measure relates to objective I-C.
Use of subscales:	No subscales are available.
Recommendation:	Attempting to measure self-esteem through observed behavior is a noble enterprise in general, however, the behaviors that are rated in this scale are not sufficient indicators of self-esteem. The scale may be measuring something entirely different from self-esteem. Also, teachers are not good raters of these behaviors. These types of ratings get at the exact things that the Buckley amendment is designed to counteract. Rosenberg's scale, which can be administered and scored by the student himself, would be a better choice.
Suggested alternatives:	See suggestions regarding Rosenberg's scale.

Career Maturity Inventory

General description:	This test battery includes an attitude scale and competence test which contains five subtests: self-appraisal, occupational information, goal selection, planning, and problem solving. The attitude scale "elicits the feelings, the subjective reactions, the dispositions that the individual has toward making a career choice and entering the world of work." In all, five factors of career choice attitude are measured: involvement in the choice process, orientation toward work, independence in decision making, preference for career choice factors, and conceptions of the career choice process. In each of the competence test subtests, a number of hypothetical situations are presented in each instance and the respondent is asked to choose one of five alternatives.
Administration time:	2-1/2 hours are required for the complete inventory.
Scoring time:	Inventories can either be scored by machine or by hand with a scoring stencil or answer key. It is estimated that one or two minutes are required to score one inventory.
Technical quality:	The inventory was constructed in a very systematic manner. The internal consistency estimates for the attitude scale have been calculated for grades 6 through 12 and average .74. One-year test-retest reliability was found to be .71. Internal consistency estimates for the competence tests have been in the .70s and .80s. The attitude inventory was constructed from a pool of items that were theoretically relevant, and "linguistically representative of the verbal vocational behavior of adolescents." Items were selected from the pool that differentiated among age and grade levels. Content validity was achieved by having judges indicate what they considered as the most mature response. Judges had 74 percent agreement with the standardization sample. The construct validity of the competence test has been explored by obtaining correlations among subtests. The r's ranged from .25 to .73, with a mean of .54.
Relationship to program objectives:	The attitude scale relates to objective V-F; the subtest "knowing yourself" relates to objective I-A; the subtest "knowing about jobs" relates to objective IV-A; the subtest "choosing a job" relates to objective V-A; the subtest "looking ahead" relates to objective V-E; and the subtest "what should they do?" relates to both objectives II-D and V-C. Of course the problem is that the inventory scales do not measure the objective exactly as stated. For example, the attitude scale has several items dealing with whether a student is actively involved in career decision making. But it also has items in the scale that are unrelated to involvement with career decision making. The total score for the attitude scale does not reflect the desired objective, but rather a combination of different, and possibly unrelated, objectives.

Use of subscales: The Career Maturity Inventory gives a score for each of the subtests. The six scores are placed in a profile.

Recommendations: This type of assessment instrument does not, and indeed cannot, measure accomplishment of the program objectives. The data presented in the Theory and Research Handbook regarding the validity of the inventory scales is lacking. There are also a number of other problems, such as using empirically keyed items in the attitude scale and the apparent lack of correspondence between the items and the scale names.

Many assumptions were made regarding "career maturity" that are untested. The competence test, for example, assumes that "individuals who can accurately appraise the career relevant capabilities of others are good self-appraisers." The attitude scale apparently is multidimensional, yet scores are reported on a one-dimensional scale, which is misleading.

On the other hand, it is extremely difficult to construct a test with the aims of the Career Maturity Inventory. The author, John Crites, is a respected individual who has devoted much of his work to vocational and career development, and as such, lends a great deal of authority to the inventory. However, it is suggested that to assess career education objectives administer the whole inventory to students, but score only the items that relate directly to the objective being measured. Of course, this would destroy the norms and lower the reliability, but the assessment would be improved.

Suggested alternatives: There are no good ways of solving the problem of matching test items to career education objectives. Consider Super and Forest's Career Development Inventory, Prediger, Westbrook, and Roth's Assessment of Career Development, and an old, somewhat out-of-date test by Katz, the ETS Guidance Inquiry. Trying to develop local tests is discouraged; however, parts of existing tests can be used for the assessment.

Rotter's revised scale of focus of control

General description: This scale consists of eleven items from an earlier scale developed by Rotter.* The scale measures the degree to which a student views what happens to him as being related to his own actions (internal control) versus being related to other forces such as luck, chance, powerful others, etc. (external control). High scores on this scale denote higher external control. The items selected from Rotter's scale were selected on the basis of being more general, adult-oriented, and work related. Each item is given a score of one to four.

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*Rotter, J. Generalized expectancies for internal versus external control of reinforcement. Psychological Monographs, 1966, 80.

Administration time: Approximately 10 minutes and can be administered on individual basis.

Scoring time: Approximately 1 minute.

Grade levels for which instrument is appropriate: High school juniors and seniors

Technical quality: Although there is quite a bit of information available on Rotter's 29 item scale - reliability is about .70 - there is no information regarding the reliability and validity of this 11 item scale. Supposedly, there have been findings that low scores (internal control) are associated with higher status occupations, knowledge of the work world, and progress on the job. No norms are available.

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Relationship to program objectives: The focus of control measure relates most strongly to objective IV-E, "positive attitude toward responsibility for (the students) own behavior" although it also relates, though somewhat peripherally, to different aspects of self-awareness.

Use of subscales: There are no subscales.

Recommendation: There is so little information available on this short form that it is difficult to make any recommendation. Nonetheless, Rotter's scale has been used in many important studies even though there have been problems of social desirability and multidimensionality in the items. Factor analyses of the 29 item scale have uncovered one factor, named "personal control," comprised mainly of items phrased in the first person. A second factor, "control ideology," has been found comprised of items phrased in the third person.

Suggested alternatives: Consider the full 29 item scale rather than the shorter form. Another alternative that might be worth noting would be to take the full 29 item scale and use only the items phrased in the first person - i.e., the "personal control" items as a measure for objective IV-E.

Rosenberg's self-esteem scale

General description:	This scale consists of ten items each answered on a four point scale ranging from strongly agree to strongly disagree. Although each item has four response options, the items are scored either positively or negatively. Some of the items are combined so that scores range from 0 to 6.
Administration time:	5 to 10 minutes.
Scoring time:	About 1 minute per student. Items can also be scored by students themselves.
Grade levels for which instrument is appropriate:	The scale was designed for juniors and seniors in high school.
Technical quality:	In his book Society and the Adolescent Self-Image,* Rosenberg gave only a coefficient of reproducibility of .92 and scalability coefficient of .73. A small scale study by Seller and Tippett** indicated that the test-retest correlation over two weeks was .85. They also found that the scale correlated from .56 to .83 with several similar measures and clinical assessments. Rosenberg presents a great deal of data about the relationship of the self-esteem scale with other measures - viz., neurosis, depressive effect, gloom and disappointment, etc.
Relationship to program objectives:	The self-esteem measure is an indicator of the students attitude toward himself, objective I-C.
Use of subscales:	There are no subscales.
Recommendation:	The scale is both brief and thorough, which should benefit any effort to assess attainment of the program objectives. It is highly reliable for such a short scale and could be used without grouping items as directed. Students could also administer the scale to themselves and score it themselves. Because the scale is short and well regarded by many social psychologists, it should be included in any attempt to measure student attitude toward themselves.
Suggested alternatives:	A longer scale that may be worth consideration is Coopersmith's "Self-esteem Inventory" although Rosenberg's scale is better suited to an assessment program.

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*Rosenberg M. Society and the Adolescent Self-Image. Princeton, N.J.: Princeton University Press, 1965.

**Silber, E & Tippett, J. Self-esteem: Clinical assessment and measurement validation. Psychological Reports, 1965, 16, 1017-1071.

Student information sheet

General description:	This sheet is a two part questionnaire concerning the student's educational background. The first part, including nine items completed by the student, asks about his sex, race, residence, attitude toward school, educational plans, work experience, and thoughts about his future. The second part, completed by the student's teacher, asks about the occupation of head of household, the student's IQ, and percentile rank reading score.
Administration time:	Approximately 10 minutes for students and 5 minutes for each student by the teacher.
Scoring time:	Unknown
Grade levels for which instrument is appropriate:	A student would have to be 15 to 16 years old in order to answer questions 8 and 9 of Part I.
Technical quality:	There is no information available as to the reliability and validity of the questionnaire items. Based on previous experience with national survey data, it is likely that Part I, items 3, 4, and 6 would be very reliable, probably in the neighborhood of .60 to .70. On the other hand, items such as 7 and 9 are usually extremely unreliable - in the neighborhood of .10 to .20, which is unacceptable. The quality of Part II, item 1, is questioned and may be invalid, for the most part. IQ score could also be subjected to some criticism depending on when the IQ score was obtained.
Relationship to program objectives:	None.
Use of subscales:	All data is item data only.
Recommendation:	The student information sheet should not be retained in its present form. Background questions often seem appropriate in collecting data, for one reason or another. Nonetheless, there should be a specific reason for including every bit of information - i.e., all information collected should be used in the analysis of the outcome data in some fashion. If such variables are included in the analysis, then that is fine; otherwise, do not collect the data. Either expand the information sheet to improve the quality of the items or drop the potentially unreliable items.
Suggested alternatives:	If such variables as attitude toward school (Part I, item 7), future plans (Part I, item 9), and parents occupation (Part II, item 1) are to be used in the analysis, these

constructs should be defined better and measured through scales rather than by single items. For example, an overall attitude toward school scale might contain items about counselors, teachers, courses, extracurricular activities, and difficulties with teachers and subjects. A ten item scale, perhaps called "dissatisfaction with school," might look something like this:

		disagree	agree	agree very much
1.	Teachers always give me a hard time	1	2	3
2.	I don't like the other students in this school very much	1	2	3
3.	The school counselors don't help me	1	2	3
4.	My courses are very boring	1	2	3
5.	I don't participate in extracurricular activities	1	2	3
6.	My courses are too difficult for me	1	2	3
7.	Teachers don't help me enough	1	2	3
8.	Other students at this school don't like me	1	2	3
9.	I don't like the principal of this school	1	2	3
10.	The other students in this school are not as smart as they think	1	2	3

Measures Reviewed for Possible Use
in FY 76

The instruments listed below were chosen for review based upon annotated bibliographies of the ETS test collection. Additional instruments were rejected without review as 1) inappropriate for the age groups to be included in the evaluation of the Career Education Consortium, or 2) not measuring the project objectives.

Self-awareness - Grades 3, 6

"Self-esteem Inventory," Stanley Coopersmith. In The Antecedents of Self-esteem by Coopersmith; W. H. Freeman and Co , San Francisco, 1967.

Comment: No grade level norms; insufficient technical data.

"Self Report - Inferred Self-concept Scale" ("About Me"). James Parker, in "The Relationship of Self Report to Inferred Self-concept" by James Parker in Educational and Psychological Measurement, 1966, 26, 291-700.

Comment: No norms data, no reliability reported.

"How I See Myself," Ira J. Gordon, Florida Educational Research and Development Council, University of Florida, Gainesville, 1968.

Comment: Well documented, but response made is more difficult for young children than that used in the Piers-Harris scale.

"Piers-Harris Children's Self-concept Scale" ("The Way I feel About Myself"). C. Piers and D. Harris, Counselor Recordings and Tests, Nashville, Tennessee, 1969.

Comment: Well documented, reviewed favorably in Buros' Mental Measurement Yearbook, 5th Edition. Format requires only a yes-no response.

Career Knowledge - Grades 3, 6

"Career Education Cognitive Questionnaires," B. Rader and K. Nelson, Minnesota Research Coordinating Unit for Vocational Education, University of Minnesota, Minneapolis, 1975.

Comment: Field testing involved a relatively limited sample, but instruments are presently being used to evaluate a number of Part D projects, and additional data should be available soon. Quality of printing on instruments is not uniformly high. Recommended by USOE Guidelines for Evaluation.

"Career Education Needs Assessment," A. Blome and G. Rask, Olympus Publishing Co., Salt Lake City, 1975.

Comment: Good face validity in instrument for grades 4-6, but no technical data was available. K-3 instrument requires individual administration.

Career Knowledge and Decision-Making - Grades 9, 12

"Readiness for Vocational Planning" by Donald Super. In Emerging Careers by Warren D. Gribbons and Paul R. Lohnes, Teacher's College Press. Columbia University, New York, 1968.

Comment: Requires individual interviews, not appropriate for evaluation.

"Career Development Inventory," Donald Super and David J. Forrest. Teacher's College, Columbia University, New York, 1972.

Comment: Not published; requires weighted scoring; includes attitudinal and cognitive scales; data available from only one study of 400 tenth grade students in Michigan.

"Guidance Inquiry," M. Katz. ETS, Princeton, N. J.

Comment: No longer available; redesigned as an instructional program.

"Assessment of Career Development, Grades 8-11," American College Testing Program, Houghton Mifflin Company, Atlanta (Boston), 1974.

Comment: Well documented, more comprehensive than others reviewed, good match of project objectives and test subscales; requires 125 minutes of test time.

Appendix C

Evaluation Plan for 1975-76

A Proposal for the Continuation of a Third-Party
Evaluation of the Florida Comprehensive Program
for Career Development:
Kindergarten through Universities

(The Third-Party Evaluation for the U. S. Commissioner's
Discretionary Exemplary Vocational Project)

A Technical Proposal

to

The Florida Department of Education

by

Educational Testing Service

17 Executive Park Drive, N. E.

Suite 100

Atlanta, Georgia 30329

This information and data furnished shall not be discussed outside of the Florida Department of Education and shall not be duplicated, used, or disclosed in whole or in part for any purpose other than to evaluate the proposal, provided that if a contract is awarded to this offeror as a result in connection with the submission of this information and data, the Florida Department of Education shall have the right to duplicate, use, or disclose the information or data to the extent provided in the contract. This restriction does not limit the Florida Department of Education's right to use information and data contained herein if it is obtained from another source without restriction.

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Appendix

I. Background

In February, 1975, Educational Testing Service entered into an agreement with the Florida Department of Education, Division of Vocational, Technical, and Adult Education to plan and conduct an evaluation of the Florida Comprehensive Program of Vocational Education for Career Development as required by the Rules and Regulations of Section 142(c) of Part D, Vocational Educational Amendments of 1968, P. L. 90-576. In accord with that agreement, ETS has sought to 1) establish a working relationship with the project management, staff, and participants, 2) review and organize available data concerning both the process and products of the project, 3) assemble information to support a certification that the program is, in fact, in operation, 4) identify processes and activities which are not on schedule in their development and thus endanger the success of the program, 5) solidfy sampling and data collection procedures, and 6) develop the final evaluation design in congruence with the discovered realities of the program.

Activities proposed by ETS for fiscal year 1975-76 build upon the activities and experiences of our previous involvement. Whereas most of the activities of the previous four months involved establishing relationships, orientation, and the development of an evaluation design, activities for the coming year can move to an implementation of the evaluation and more definitive feedback on project effects.

As indicated in the original proposal of ETS, the specifics of evaluation design and the details of information collection will continue to evolve overtime, in step with the development of the project. The plan summarized in this proposal has already undergone several revisions and will be revised again as the project changes. The plan presented, however, has been reviewed by the project staff and approved as an appropriate approach to the evaluation of project activities as presently defined.

II. Product Evaluation

The evaluation of the Florida Comprehensive Program of Vocational Education for Career Development can be considered in two parts: process evaluation and product evaluation.

As generally defined, product evaluation is based upon the assessment of student changes related to behavioral objectives specified by the project. The Career Education Consortium, working cooperatively with the district career education projects in Manatee County and Sarasota County, have defined student objectives for elementary and middle school students in the second quarterly project report. These objectives are classified according to the nine student outcome areas identified in *Handbook for the Evaluation of Career Education Programs*. It is anticipated that the consortium will, in the near future, identify additional student outcome objectives for secondary and post-secondary students. As additional objectives are defined, the product evaluation will be expanded to include the added dimensions.

It is neither necessary nor feasible for the product evaluation to include a measure of every student outcome for every student. The project effects can be determined within limits of probability through a sampling of both outcomes and student participants through a controlled design. The principles for establishing such a design are outlined in the *Handbook for the Evaluation of Career Education Programs*. The proposed design follows these principles and will provide a reliable and valid estimate of the accomplishment of student objectives resulting from the implementation of career education activities in Manatee and Sarasota counties.

Research Design: Student behaviors are influenced by a multitude of factors other than the project "treatment." To isolate the effect of the treatment, every effort must be made to "control" other influencing variables. Ideally, extraneous variables can be controlled through the random selection of Ss and random assignment of Ss to a treatment or control condition. The random assignment of Ss is not possible in the Sarasota and Manatee districts, but limited control of variables associated with history, maturation, testing, instrumentation, and sample mortality can be obtained through a design utilizing a comparison group of students of the same grade placement who are experiencing none or very few of the career education services provided to target schools. In both Sarasota and Manatee, not all schools are equally involved in the career education project, therefore, a comparison group is available.

The design to be implemented is a pre-post comparison group design. The design is symbolically represented as follows:

treatment group	0	X	0
comparison group	0		0

Sample Size: The evaluation budget will provide materials for testing 800 students on each of two occasions. With two districts involved, this is 400 students per district. Three hundred students will be selected from the treatment group and 100 from the comparison group.

Grade Levels and Variables to be Measured: A minimal program of student assessment is established by the previous contractual arrangement between ETS and and the Florida Department of Education:

"In accomplishing this, the work during the current year shall include but not be limited to measures of the following:

1) The extent to which students who have participated in the project demonstrate an increase in self-awareness in Grade levels 3, 6, and 9;

2) The extent to which students who have participated in the project demonstrate an increased awareness of and knowledge about work at Grade levels 3, 6, 9, and 12;

3) The extent to which students who have participated in the project demonstrate increased competency in career decision-making skills at Grade levels 9 and 12."

This minimal program is outlined below:

Objective	Grade Level			
	3	6	9	12
Self-awareness	X	X	X	
Work-knowledge	X	X	X	X
Career decision-making			X	X
sample-treatment	150	150	150	150
sample-comparison	50	50	50	50
	200	200	200	200

Test Schedule: One week will be allowed for each test administration. The specific days and times for testing will be coordinated by the local district. Pretests will be administered September 8-12, 1975, in Sarasota County and October 6-10, 1975, in Manatee County. Posttests will be administered May 17-21, 1976. This schedule allows a maximum treatment period without the interference of school starting and school ending events.

Service Provided to the District by ETS:

1) provide examination copies of instruments by August 15, 1975.

2) select sample from lists provided by district.

3) conduct orientation workshop for person(s) responsible for testing at each school.

4) summary of pretest results by January 1, 1976.

5) summary of posttest results by August 1, 1976.

6) all student materials, scoring, and analysis services will be provided by ETS.

7) an ETS consultant will be present on the days of and prior to the first administration in each district to answer questions of procedure.

Services Provided by the District:

1) confirm test dates.

2) provide list of students in treatment groups.
provide list of students in comparison groups.

3) notify counselors, teachers, parents, etc. of test purposes, dates.

4) provide list of persons to be responsible for administering tests at each school.

5) receive, administer, and return all test materials.

Data Analysis: Distributions and descriptive statistics of pretest scores and subscores for each grade level and treatment group will be produced for each district separately as well as in combination.

Posttest scores for treatment and comparison groups will be compared using analysis of variance. However, if significant differences between the treatment and comparison group pretest scores are observed, analysis of covariance with pretest scores as covariant will be used to analyze posttest score differences. All analyses will be done for the two districts separately and for their combination.

Role of USOE Guidelines for the Evaluation of Career Education Programs

The draft guidelines prepared by Development Associates, Inc. for USOE are intended to aid career education programs in the evaluation process and are not intended as a hindrance to either program management or evaluation. The guidelines are limited in application to product outcomes for elementary through secondary students. The guidelines make no provision for process measures or measures of outcomes for nonstudent groups or postsecondary student groups. These are the two major areas of concern to the Career Education Consortium.

Nevertheless, an attempt has been made to apply the basic elements of the federal guidelines model where appropriate to the consortium project. This effort will be communicated to USOE and to Development Associates, Inc. in hopes that the guidelines will be both simplified and expanded to consider a wider range of outcomes.

Treatment Group-Outcome Area Table

The Treatment Group-Outcome Area Table serves several functions. This table identifies the various treatment groups. Each treatment group consists of project participants receiving the same services from the project. Each group, however, receives a different set of services.

From a survey of project documents and from interviews with project staff, twenty-seven treatment groups are identified. These fall into three classes: students, faculty and staff, and the business community. Table 1 lists the thirteen student treatment groups. The faculty and staffs of the student groups represent thirteen additional treatment groups. A twenty-seventh group is the business community.

The TG-OA table also identifies as treatments those components listed in the consortium proposal or the proposals for the two district projects. Activities comprising the components are described in project documents.

The third element of the TG-OA table is the classification of objectives or outcomes for each treatment group according to the nine major outcome areas identified in the *Evaluation Guidelines*. These are listed in Table 3.

This task demonstrated some of the fundamental weaknesses of the *Guidelines*' design as well as some weakness in the planning documents for the consortium. The nine areas of outcomes listed in the guidelines all relate to student outcomes. Consequently, there is no system for classifying outcomes for the faculty-staff or business community objectives, and, therefore, many of the activities and goals of the consortium are not recognized by the *Guidelines*' design.

The TG-OA table also points to a weakness in consortium planning.

Goals and activities for students at the postsecondary level are not clearly stated. There is, at the present time, limited service available to postsecondary students. Most postsecondary activity has been aimed at faculty-staff. As treatments reach the student level, project efforts should be turned to identifying treatment groups and expected outcomes. The same is true for private school groups and for handicapped students.

Noting the two restrictions above, the TG-OA table can be appropriately completed only for the eight student treatment groups, elementary through secondary (this was obviously the intent of the Guidelines' design). This should in no way imply that the consortium should increase efforts in the elementary-secondary student programs to the detriment of other treatment groups. It is an artifact of the Guidelines' design.

The assignment of outcome areas to treatment groups is based upon the consortium analysis of project objectives presented as Appendix A of the Second Quarterly Report.

Table 1

List of Student Treatment Groups

Students

Elementary - K-3

1. Manatee Co.

2. Sarasota Co.

Middle School - 4-6

3. Manatee Co.

4. Sarasota Co.

Jr. High - 7-8

5. Manatee Co.

6. Sarasota Co.

Secondary Schools

7. Manatee Co.

8. Sarasota Co.

Jr. College

9. Manatee Jr. College

University

10. University of South Florida

11. Adult

12. Private Schools

13. Handicap

Vo Tech

14. Manatee Co.

Vo Tech

15. Sarasota Co.

Table 2

Treatment Group/Outcome Area for Student Participants

Treatments/Treatment Groups*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Elementary Curriculum	X	X													
2. Middle School-Jr. High Curriculum			X	X	X	X									
3 Secondary Curriculum							X	X							
4. Postsecondary Curriculum									?	?	?				
5. Placement and Follow-up							X	X	X	X					
6. Guidance and Counseling			X	X	X	X	X	X	X	X	X	X	X		
Outcome Areas**	I II III IV V VI	I II III IV V VI	I II III IV V VI	I II III IV V VI	II III IV V VI	II III IV V VI	I II VIII IX	I II IV V VI VII VIII IX							

*See Table 1 for description of treatment groups
**Outcome Areas are listed in Table 3

Table 3

Career Education Objectives in Terms of Student Outcome Areas

I. Students will demonstrate increased self awareness.

II. Students will demonstrate increased competency in basic academic/ vocational skills.

III. Students will demonstrate increased awareness of work values and possess a desire to engage in paid and/or unpaid work.

IV. Students will demonstrate increased awareness of and knowledge about work.

V. Students will demonstrate increased competency in career decision-making skills.

VI. Students will demonstrate good work habits.

VII. Students will demonstrate work-seeking and work-getting skills.

VIII. Students who are leaving the formal education system will be successful in being placed in a paid occupation, in further education, or in unpaid work that is consistent with their current career education.

IX. Students will be aware of means available for continued education once they have left the formal educational system.

Outcome Question/Treatment Group Matrix

The Outcome Question/Treatment Group Matrix identifies the specific objectives of the Guidelines' design which are appropriate to each treatment group in the project. Since each of the Guidelines' objectives relate to student outcomes, this matrix is completed only for student groups. The analysis is based upon the comparison of consortium and county objectives to federal guideline objectives in the consortium's Second Quarterly Report. The outcomes for Manatee Junior College and University of South Florida students are not clear in project documents and have not been included.

Table 4

Outcome Question/Treatment Group Matrix

Treatment Group / Outcome Questions	Manatee County							Sarasota County									
	K-2	3-4-5	6	7	8	9-12		K-2	3-4	5-6	7	8	9	10-12		MJC	USF
I. Increased Self-Awareness A. Have students increased their ability to describe their own current abilities and limitations?																	
B. Have students increased their ability to describe their own current interest and values?	X	X	X					X	X	X							
C. Do students display more positive attitudes toward themselves?	X	X	X					X	X	X							
D. Have students increased their recognition that social, economic, educational, and cultural forces influence their development?	X	X	X					X	X	X							

Table 4 -- Continued

Treatment Group / Outcome Questions	Manatee County							Sarasota County									
	K-2	3-4-5	6	7	8	9-12		K-2	3-4	5-6	7	8	9	10-12		MJC	USF
II. Increased Basic Academic/Vocational Skills A. Have students increased their level of generally useful numerical skills?	X	X	X					X	X	X							
B. Have students increased their level of generally useful communication skills?	X	X	X					X	X	X							
C. Have students increased their level of generally useful information processing skills?	X	X	X					X	X	X							
D. Have students increased their level of generally useful decision-making skills?	X	X	X	X	X			X	X	X	X	X					
E. Have students increased their level of generally useful interpersonal skills?	X	X	?	?				X	X	X	X						

Table 4 -- Continued

Treatment Group / Outcome Questions	Manatee County							Sarasota County								MJC	USF
	K-2	3-4-5	6	7	8	9-12		K-2	3-4	5-6	7	8	9	10-12			
III. Increased Awareness of Work Values																	
A. Have students increased their recognition of the bases of various work values?	X	X	X					X	X	X							
Increased Desire to Engage in Paid and/or Unpaid Work																	
B. Do students possess more positive attitudes toward paid and unpaid work?	X	X	X	X				X	X	X	X						
IV. Increased Awareness of and Knowledge About Work																	
A. Have students increased their knowledge regarding the major duties and required abilities of different types of paid and unpaid work?	X	X	X					X	X	X							

Table 4 -- Continued

Treatment Group / Outcome Questions	Manatee County							Sarasota County									
	K-2	3-4-5	6	7	8	9-12		K-2	3-4	5-6	7	8	9	10-12		MCC	USF
B. Have students increased their knowledge of differences in work conditions and life styles associated with different types of paid and unpaid work?	X	X	X	X	X			X	X	X	X	X					
C. Have students increased their knowledge of entry requirements for major types of paid and unpaid work?	X	X	X					X	X	X			X				
D. Have students increased their knowledge of the impact of social and technological change in paid and unpaid work?	X	X	X					X									
E. Have students increased their knowledge of the important factors that affect work success and satisfaction?	X	X	X					X	X	X			X				

Table 4 -- Continued

Treatment Group / Outcome Questions	Manatee County							Sarasota County								MJC	USF
	K-2	3-4-5	6	7	8	9-12		K-2	3-4	5-6	7	8	9	10-12			
V. Increased Career Decision-Making Skills A. Have students increased their ability to associate their own abilities and limitations with possible success in present or future paid and unpaid work?		X	X		X				X	X		X	X				
B. Have students increased their ability to relate their personal interests and values to types of paid and unpaid work and their associated life-styles?	X	X	X	X	X			X	X	X	X	X	X				
C. Have students increased their ability to (a) identify, (b) locate, and (c) utilize sources of information to solve career decision-making problems?	X	X	X					X	X	X			X				

Table 4 -- Continued

Treatment Group / Outcome Questions	Manatee County							Sarasota County									
	K-2	3-4-5	6	7	8	9-12		K-2	3-4	5-6	7	8	9	10-12		MJC	USF
D. Have students increased their ability to determine the potential for future advancement/personal growth in work of their choosing?	X	X	X					X	X	X			X				
E. Have students increased their knowledge of the steps to be taken and the factors to be considered in career planning?	X	X	X	X	X			X	X	X	X	X	X				
F. Have students increased their active involvement in career decision-making?	X	X	X					X	X	X							
VI. Improved Work Habits A. Are students able to plan work effectively?																	

Table 4 -- Continued

Treatment Group / Outcome Questions	Manatee County							Sarasota County									
	K-2	3-4-5	6	7	8	9-12		K-2	3-4	5-6	7	8	9	10-12		MJC	USF
B. Are students more adaptable to varied work situations?																	
C. Do students have a more positive attitude towards the concepts of quality in relation to a work task?																	
D. Do students have a more positive attitude towards conservation of environmental and human resources in accomplishing work tasks?	X	X	X	X	X			X	X	X		X	X				
E. Do students have a more positive attitude towards responsibility for their own behavior and accomplishment of self-imposed work tasks?	X	X	X	X				X	X	X	X						
F. Do students demonstrate an increased desire for continuous learning both in school and out?																	

Table 4 -- Continued

Treatment Group / Outcome Questions	Manatee County							Sarasota County									
	K-2	3-4-5	6	7	8	9-12		K-2	3-4	5-6	7	8	9	10-12		MJC	USF
VII. Increased Work Seeking and Work Getting Skills A. Have students increased their ability to (a) identify, (b) locate, and (c) utilize sources that contain information about paid and unpaid work?													X				
B. Have students increased their level of skills required in (a) applying for, and (b) accepting work?													X				
VIII. Placement A. How many students have been placed or are engaged in further education and how does this compare with prior years?						X							X	X			
B. How many students have been placed in a paid occupation, and how does this compare with prior years?						X							X	X			

Table 4 -- Continued

Treatment Group / Outcome Questions	Manatee County							Sarasota County									
	K-2	3-4-5	6	7	8	9-12		K-2	3-4	5-6	7	8	9	10-12		MJC	USF
C. Of those placed in (a) further education, and (b) employment, how many consider the placement to be consistent with their career plans?						X							X	X			
D. Of those not placed in further education or in a paid occupation, how many are engaged in (a) unpaid work consistent with their career plans, and how does this compare with prior years?						X							X	X			
IX. Increased Awareness of Means for Continued Education A. Have students increased their ability to identify sources of additional education in major types of paid and unpaid work?													X				

Table 4 -- Continued

Treatment Group / Outcome Questions	Manatee County							Sarasota County								MJC	USF
	K-2	3-4-5	6	7	8	9-12		K-2	3-4	5-6	7	8	9	10-12			
B. Have students increased their ability to identify means to support additional education for themselves in major types of paid and unpaid work?													X				

Emphasis of the Evaluation

Activities for the first year of the CEC project have centered on the orientation of staffs of the member institutions to the concept and goals of career education and to establishing lines of communication among the member institutions. Target groups have been elementary and secondary teachers, guidance counselors, administrators, MJC and USF faculties, and the staffs of the district career education projects. Substantial efforts have also been devoted to building the knowledge and skills of the consortium staff members.

During this phase, the evaluation efforts have included an accounting of contacts made and communication lines established as well as the collection of baseline measures of student behaviors at the elementary and middle school levels.

During the second year of the CEC project, contacts with elementary and middle school personnel will continue, but the project emphasis will shift to secondary and postsecondary levels where career education concepts and activities are not as fully developed or as well established.

Evaluation efforts begun during the first year will continue with improvements based upon experience. Evaluation will also be expanded with attempts to go beyond an accounting of activities to systematically assess the impact of these activities on the target groups and programs of the project.

The emphasis of the evaluation effort will be on "process." Many of the consortium activities do not involve direct student contact.

The consortium is attempting to influence many nonstudent groups through workshops, committees, publications, and personal contacts. The logical expected consequence is that these nonstudent groups will undertake actions that will influence the education of students. The student effects resulting from such an approach are often long range and may not be discernible during the early stages of the project. Evaluation to provide information for program management must, therefore, look for intermediate indicators. The identification of intermediate indicators of project progress is a part of "Process Evaluation."

One indication of the progress of CEC is a sample accounting of activities planned versus activities completed each quarter. The project quarterly report presently provides this accounting. A second level of Process Evaluation must focus on the impact of these activities on significant target groups. This impact is not presently being systematically assessed and reported. During year two of the CEC project the third party evaluation will attempt to provide this systematic assessment of the impact of CEC activities on the knowledge, attitudes, resources, and actions of target groups whose actions are critical to the accomplishment of project goals.

During the latter part of year two and on into year three, career education programs for MJC and USF students should develop to a stage where it is reasonable to expect some change in student outcomes. The evaluation plan will develop with these programs such that student outcomes at the postsecondary level will be assessed when programs are implemented.

For the immediate future, the greatest evaluation need of the CEC project is the area of Process Evaluation. Product evaluation at elementary and secondary levels is underway; product evaluation at postsecondary levels would, at this point, be premature. A majority of CEC activities do not involve direct contact with students. These activities are nevertheless critical and should be evaluated. No guidelines, models, or designs for Process Evaluation have been provided to the project. For these reasons, a major emphasis of this planning document is the presentation of a concertual model for the "Process" elements of the CEC project.

III. Process Evaluation

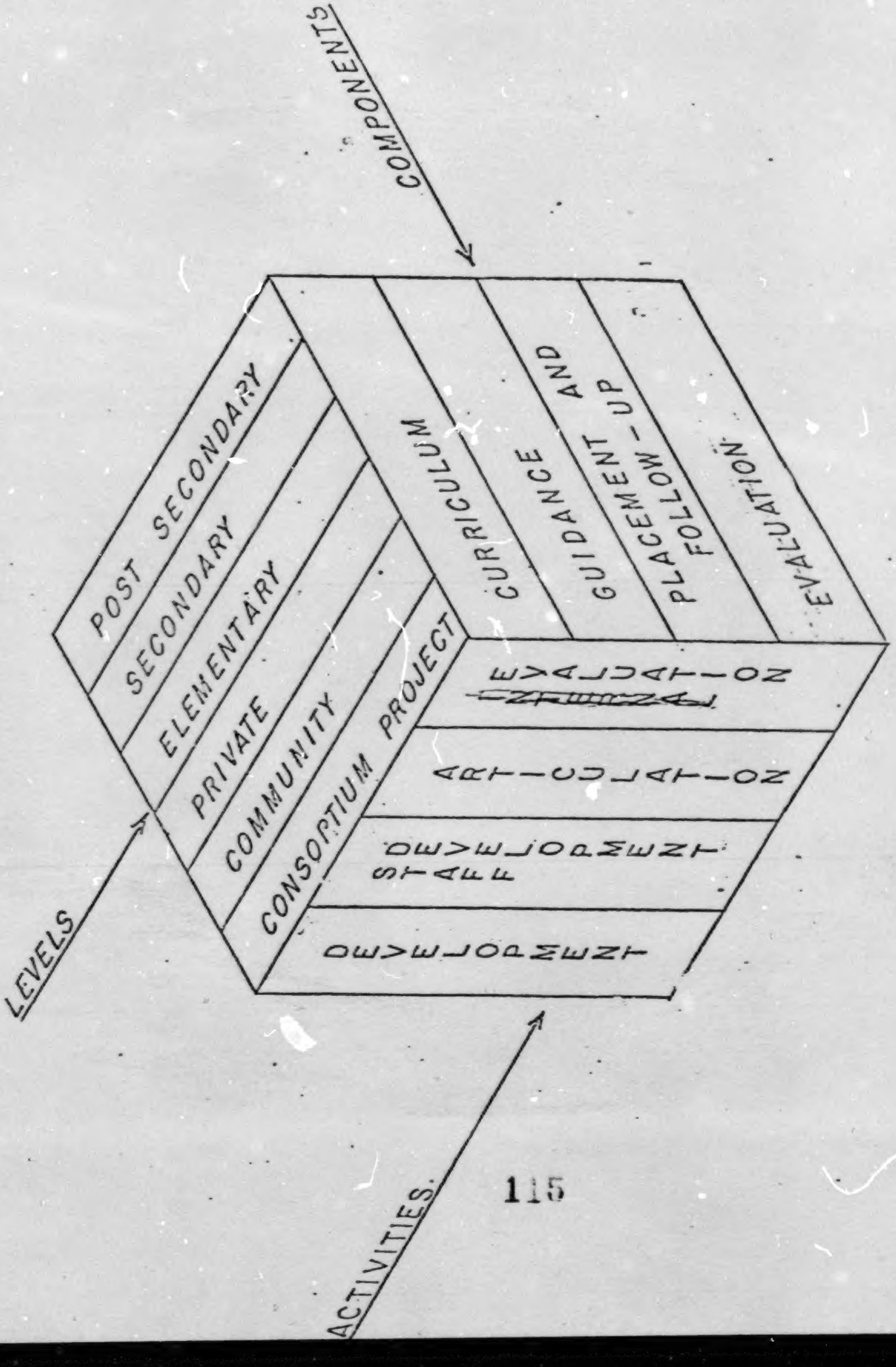
Product evaluation is based upon the outcomes of a project in terms of behavior changes. In contrast, process evaluation attempts to describe and assess the effectiveness of activities, components, and transactions which are intended to produce the outcome effects. The steps to be followed in the process evaluation for the CEC project include 1) definition of a sampling base representative of all project activities, 2) selection of a sample of elements from the defined base, 3) a listing of process objectives and proposed activities from project documents for each element selected for evaluation, 4) preparation of evaluation questions and sources of information for each process objective or activity identified, 5) collection of information for each evaluation question from project documents, staff, and participants, 6) analysis of data, and 7) preparation of a descriptive and evaluative report of findings and conclusions.

1) Definition of sampling base: The design for process evaluation of the CEC project begins with the description of the project structure, components, and activities provided by the project planners. A three dimensional representation of the project model is presented as Appendix N of the project Third Quarterly Report and is reproduced as Figure 1 of this proposal. The dimensions of this model include 1) student levels, 2) service components, and 3) management functions (labled "activities" in Figure 1).

Figure 2 is a matrix combining the elements of the structural model for the CEC project. This matrix will form a basis for sampling from the many activities of the CEC project for the purpose of evaluation. This procedure is somewhat

Figure 1

Conceptual Model for CEC Project



analogous to sampling behavioral objectives for the purpose of product evaluation. The elements of the matrix represent the population of all activities undertaken by the Florida Career Education Consortium. It is not possible to observe and evaluate all project activities, therefore, a systematic sample of activities is drawn as representative of all activities.

2) Selection of Sample: The elements of the CEC project structure to be evaluated during the 1975-76 fiscal year and the quarter in which each element will be evaluated are indicated in Figure 2. These elements have been selected by the evaluator to represent a broad spectrum of project activities. Not all elements of Figure 2 are receiving equal emphasis in the CEC project. The process evaluation will attempt to describe and value the status of the elements selected in relationship to project emphasis, goals, and plans and will include recommendations for changes in direction or effort.

Figure 2

Elements of the Florida Career Education Consortium Model to be Evaluated in 1975-76

Matrix

Components and Functions	Elementary		Secondary		MJC	USF	Vo-tech	Private Schools	Community
	Manatee	Sarasota	Manatee	Sarasota					
Curriculum Planning Development In-service Articulation Evaluation				July-Sept.		Apr.-June			
Guidance Planning Development In-service Articulation Evaluation	Apr.-June				Oct.-Dec.			Jan.-Mar.	
Placement and Follow-up Planning Development In-service Articulation Evaluation					Oct.-Dec.				Jan.-Mar.

3) Identification of process objectives and activities: The process evaluation for each element selected will be structured according to the five management functions listed for each component in Figure 2 (Planning, Development, In-service, Evaluation, and Articulation). For each management function, the evaluator will identify relevant process objectives, tasks, and activities specified in CEC project quarterly reports. As an example, some of the activities planned for the curriculum component at the secondary level are listed in Table 1 of the Appendix. (This component is scheduled for evaluation the first quarter of FY 76). For each planned activity, ETS will seek to identify evidence that the activity has been accomplished or is proceeding according to plan. Of course, not all activities of the project can be anticipated and included in the project quarterly reports. Every effort will be made to identify unanticipated activities and outcomes which relate to the specific component and level under investigation and to include these in the evaluation.

4) Evaluation questions and sources: For each activity or process objective identified in step 3, the evaluator will specify a related evaluation question and identify the source most capable of providing the required information. The primary sources will include CEC staff members, members of CEC committees and task forces, staffs of the two district projects, project documents, such as meeting minutes and newletters, and participants of in-service activities. Evaluation questions and information sources for the curriculum component at the secondary level in Sarasota County are included in Table 2 of the Appendix as an example.

5) Collection of data: Data collection will be planned such that required interviews for the evaluation of each project element can be completed during one site visit. The schedule of site visits for the collection of process

evaluation is included in the Evaluation Calendar, p. 37. Where the evaluation requires a review of project documents, the documents will be collected during the site visit and returned within thirty days.

6) Analysis of data by management function: Although each activity or process objective will be individually evaluated, an attempt will also be made to draw some generalizations concerning groups of activities which relate to specific management functions. The functions to be analyzed include planning, three subdivisions of implementation (development, in-service training, and articulation), and evaluation. Table 1 in the Appendix groups activities for the curriculum component at the secondary level in Sarasota County by management function as an example.

For each relevant management function within a project component and level being evaluted, a quality judgment will be made.

In relation to the process objectives, project accomplishments will be evaluated with respect to resource utilization, effectiveness, documentation and products, and problem identification and resolution.

In the area of Resource Utilization the evaluator will provide a subjective judgment of effective utilization of time, money, and personnel in relation to components and activities and to achievement of process objectives.

In the area of Effectiveness the evaluator will provide a value judgment on a four point scale (excellent, good, fair, poor) of the effectiveness of each activity in accomplishing its purpose. Separate ratings will be provided based upon each of three sources: 1) CEC staff perceptions, 2) Activity participants' perceptions, and 3) Objective data. Objective data might include cognitive measures administered to workshop participants, counts of requests for materials and consultants, descriptions of new programs, etc.

In the area of Documentation and Products the evaluator will provide a rating of the completeness and overall quality of 1) any report or other documentation outlining what was done (activity report), 2) any report of the end result of the task or activity (product report), and 3) any recommendations concerning the activity and its application to a "model" program (recommendations).

In the area of Problem Resolution, the evaluator will provide a rating of the project's attempts to 1) identify problems, and 2) take corrective actions.

Wherever possible, criteria and sources for the evaluator's judgments will be documented or referenced.

A summary chart such as that in in Figure 3 will be presented for each element of the project evaluated in addition to a narrative report for the evaluation of specific activities.

Figure 3

Process Evaluation Summary by
Management Function

Curriculum Component Secondary Level-Sarasota	Resource Utilization			Effectiveness			Products and Documentation			Problem Resolution	
Function	Schedule	Manpower effort	Expenditures	Staff perception	Participant perception	Objective data	Activity report	Project report	Recommendations	Identification	Strategy
1 - Planning	*	*	*	*	*	*	*	*	*	*	*
2 - Implementation											
a. Development											
b. In-service											
c. Articulation											
3 - Evaluation											

*Entries will be on a four point scale from excellent to poor based upon a synthesis of activities investigated for each function.

7) Preparation of reports: The report for each component and level evaluated will be presented in two parts. The first part will identify activities investigated, methods of investigation and a description of the status of the activity based upon the information gathered. For example, if the process objective "encourage joint staff meetings" is investigated, the descriptive report will include the number of such meetings held, the topics discussed, and the evaluative comments of those participating.

The second part of the report will present some professional judgments of the evaluation team based upon the evidence accumulated concerning each activity and for each set of activities comprising a management function for the component and level under investigation. The criteria specified in step 6 will be applied to each activity and summarized by management function.

The evaluation of the "process" elements of the CEC project clearly should be approached with an understanding of the project philosophy and priorities. Much time has been spent during the previous six months orienting Dr. Hardy and other ETS staff members to this task. The vantage point of a third party evaluator is uniquely different from that of the project staff or members of FDOE. The plan outlined in this proposal will provide information and viewpoints not available to the project management from other sources.

Services provided to the project by ETS:

1) Provide plan of activities to be investigated and dates for site visits (included in this document).
2) Provide list of evluation questions and persons to be interviewed for each site visit at least one week in advance.
3) Provide a trip report to the project director describing activities and findings.
4) Provide oral and written reports to include descriptive and judgmental data on components examined to date each quarter.

Services provided by the Project:

1) Confirm site visit dates as appropriate.

2) Schedule required interviews with project staff and participants.

3) Provide copies of all project documentation and reports.

4) Inform evaluator of upcoming significant project events.

5) Review and approve or amend all evaluation reports.

IV. Evaluation Calendar

Schedule of On Site Visits

Date	Purposes
Sept. 4, 5, 8, 9	1. Review test administration procedures with Sarasota County 2. Conduct interviews for evaluation of Curriculum component at Secondary Level in Sarasota County
Oct. 3, 6	1. Review test administration procedures with Manatee County
Oct. 20-23	1. Conduct interview for evaluation of Placement and Follow-up at MJC 2. Conduct interviews for evaluation of Guidance component at MJC
Jan. 14-16, 1976	1. Evaluation of Guidance component in Private Schools 2. Evaluation of Placement and Follow-up component at the community level
Apr. 14-16	1. Evaluation of Guidance component at Elementary Level in Manatee County
May 13, 14, 17	1. Review posttest procedures with Manatee and Sarasota School districts, monitor testing.

Report Dates

Date	Title	Content
Oct. 10, 1975	1st quarterly report	a. Elementary and secondary product pretest data from Sarasota County. b. Process evaluation of curriculum component at secondary level in Sarasota County.
Jan. 9, 1976	2nd quarterly report	a. Elementary and secondary product pretest data from Manatee County. b. Placement and Follow-up at MJC. (Process) c. Guidance component at MJC. (Process) d. Postsecondary product evaluation design.
April 9, 1976	3rd quarterly report	a. Process evaluation of guidance component in private schools. b. Placement and Follow-up at community level. c. Postsecondary pretest produ measures (if project goals at postsecondary level are defined).
June 30, 1976	4th quarterly report Final Technical Report	a. Process evaluation of guidance component at elementary level in Manatee County. b. Posttest data for elementar and secondary levels in Manatee and Sarasota Counti c. Posttest data for postsecondary level. d. Summary of product and process evaluation findings conclusions, and recommendations.

APPENDIX

Table 1

Selected Activities Planned for the
Curriculum component at the Secondary
level in Sarasota County

Activity	Source
PLANNING	
1. Review career education plans and programs in the district relative to 1.1 occupational awareness 1.2 work experience 1.3 employability skills 1.4 job entry skills	Objectives 1-4 pp. 64-90 1st quarter report
2. Encourage joint staff meetings between district staff and consortium staff	Objectives 1-4 pp. 64-90 1st quarter report
3. Gather data regarding assessment of present programs in the district	Objectives 1-4 pp. 64-90 1st quarter report
4. Identify methods for improving occupational education programs	Objectives 1-4 pp. 64-90 1st quarter report
5. Determine need for work experience programs within service area	Objectives 1-4 pp. 64-90 1st quarter report
6. Assist in identifying CE consultants for district teachers	Appendix I, p. 108 1st quarter report
DEVELOPMENT	
1. Compile lists of materials, consultants, and other information by subject area	(p. 16, 3rd quarter report)
2. Development and collection of materials relative to broad objectives	(p. 11, 2nd quarter report)

Table 1 (Continued)

Activity	Source
IN-SERVICE	
1. Conduct orientation workshops	(p. 106, 1st quarter report)
2. Workshop for secondary department chairmen	(p. 16, 3rd quarter report)
ARTICULATION	
1. Select Articulation Advisory Committee	(p. 67, 1st quarter report)
2. Establish system of communication (newsletters, field visits, etc.)	(p. 67, 1st quarter report)
3. Identify deterrents to articulation	(p. 67, 1st quarter report)
4. Refer deterrents to subcommittee for resolution.	(p. 67, 1st quarter report)
EVALUATION	
1. Evaluation of existing district programs	(p. 65, 1st quarter report)
2. Evaluation of in-service training	(p. 109, 1st quarter report)
3. Evaluation of materials and methods	(p. 9-10, 2nd quarter report)

In reviewing the list of planned activities in Table 1, information is required from at least four sources to evaluate the extent and effectiveness of these activities. A principal source for the evaluation of all activities is the CEC staff with particular emphasis on the project manager, Dr. Selman, and the persons responsible for secondary curriculum, Dr. Wu and Dr. Melton. Since there must be a close relationship between the CEC project and the district CE project, the evaluation also includes questions for the district project director and/or the member of his staff most responsible for secondary programs.

A third source of evaluation information for the curriculum component at the secondary level in Sarasota County is secondary level teachers. Teachers are the intended recipients or targets for several CEC activities. The extent to which teachers have been affected can best be assessed by direct communication with some of these teachers. ETS will request 20 minute interviews with at least five teachers in Sarasota County.

The fourth and final source of evaluation information is project documentation. Several planned activities imply a document as a final or interim product (lists of materials and consultants, evaluation reports, meeting minutes, etc.) ETS will request and reference copies of documents alluded to in project plans and will ask the project staff to identify any additional relevant documentation.

Table 2 lists some questions to be included in interviews for evaluating process aspects of the curriculum component at the secondary level in Sarasota County. Each question is related to one of the activities listed in Table 1.

Table 2

Process Evaluation Questions and Sources for the Curriculum Component at the Secondary Level in Sarasota County

Questions	Sources CEC Staff	 District Staff	 Teachers	 Documents
Planning				
1. What are the major career education activities and plans for Sarasota County?	✓	✓		✓
2. Have joint staff meetings included secondary curriculum topics and problems?	✓			✓
3. Has assessment data been gathered and synthesized for Sarasota County at secondary level?	✓	✓		
4. What program changes would result in an improved CE program at the secondary level in Sarasota County? What evidence indicates these changes would be an improvement?	✓	✓	✓	✓
5. Has a survey of work experience programs and opportunities in Sarasota County been conducted? What work experience programs are available?	✓	✓	✓	
6. Have lists of consultants for classroom teachers been prepared? Are teachers aware that this resource is available? Has assistance in identifying CE consultants been requested by any Sarasota County secondary level teacher? Has this assistance been provided?	✓		✓	
Development				
1. What materials and consultants are available to help a Sarasota County teacher integrate career education into his (math, history, etc.) class?	✓	✓	✓	✓
2. What materials related to self-awareness (or career knowledge or decision-making) at the secondary level have been collected or developed by the CEC project?	✓		✓	✓

Table 2 (Continued)

Process Evaluation Questions and Sources for the Curriculum Component at the Secondary Level in Sarasota County

Questions	Sources CEC Staff	 District Staff	 Teachers	 Documents
In-Service				
1. What proportion of the secondary level administrators and teachers have attended a career education orientation meeting or workshop?	✓	✓		
2. Would you tell me briefly and in your own words, what is Career Education?			✓	
Evaluation				
1. What evaluation of the program at the secondary level in Sarasota County has been conducted? What have been the most significant findings? How would you evaluate the Career Education Project in Sarasota County?	✓	✓		✓
2. What evaluation of in-service training for secondary level staff has been conducted? What were general findings? Who uses the evaluation findings and for what purpose?	✓	✓		✓
3. What materials and/or methods have been evaluated, are under evaluation or will be evaluated for use at the secondary level in Sarasota County?	✓	✓	✓	
Articulation				
1. Is there an articulation advisory committee? How often have they met? What issues have been discussed? What articulation problems have been solved or partially solved?	✓	✓		✓
2. What methods are used for communication between the project and secondary staff in Sarasota County? What contact have you had with the Florida Career Education Consortium?	✓		✓	✓
3. What specific articulation problems have been identified that directly effect secondary level students in Sarasota County?	✓			
4. Has a committee been assigned the task of resolving any identified deterrents to articulation?	✓			